Contents

Introduction

The scientist is wiser not to withhold a single finding

or a single conjecture from publicity.

–Goethe

Without the publication or presentation of its research, the breadth and depth of the work accomplished by ARL's technical staff would mean little. We are happy to report that ARL's staff have been *wise* in the way Goethe wrote that scientists should be. They have publicly presented their work and shared it where possible with the broader research community. In addition, through its partnerships, ARL has leveraged the expertise and resources of universities and the commercial sector made available through FedLab. At the same time, its scientists and engineers have conducted and reported on their research in fields of interest to the Army and shared their knowledge with their professional peers.

Under the Partners in Education program, various ARL sites have established programs with local schools and colleges, and we now have 42 Education Partnership Agreements. Through the Domestic Technology Transfer program, ARL encourages its research teams to establish technology transfer agreements and partnerships with outside organizations. During fiscal year 1998, the lab signed 14 new Cooperative Research and Development Agreements (CRDAs) and 2 new Patent License Agreements (PLAs). The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are aimed at firms with fewer than 500 employees. ARL awarded 30 new Phase I and 14 new Phase II SBIR contracts in fiscal year 1998.

These activities generate mutual benefits by improving youth education, especially in science and math; stimulating technological innovation; sharing technological advances by *spinning off* Army developments or *spinning on* concepts from the private sector; strengthening the role of small business in meeting Army research and development requirements; encouraging participation by minorities and disadvantaged persons; building up and exploiting research assets at universities across the country; and increasing the commercial application of Army-sponsored research and development results.

Additional information on ARL is available on the World Wide Web at the ARL homepage: www.arl.mil. For additional information on small business solicitations, visit the DoD's SBIR and STTR website at www.acq.osd.mil/sadbu/sbir/.

Education Partnership Agreements

School	ARL site	Date initiated
Howard University	ALC	6 December 1991
Capitol College	ALC	March 1992
New Mexico State University	WSMR	3 April 1992
Montgomery County Public Schools	ALC	23 April 1992
Johns Hopkins University	ALC	June 1992
University of Maryland	ALC	June 1992
District of Columbia Public Schools	ALC	17 September 1992
Carroll County Public Schools	ALC	23 November 1992
Southern University	ALC	27 November 1992
University of Arizona	WSMR	17 December 1992
Colorado State University	WSMR	14 June 1993
University of Texas at El Paso	WSMR	14 June 1993
Hampton University	ALC	15 July 1993
Harford County Public Schools	APG	8 April 1994
Clark Atlanta University	ALC	23 September 1994
University of the Virgin Islands	ALC	23 September 1994
Prince George's County Public Schools	ALC	30 September 1994
Baltimore County Public Schools	APG	3 April 1995
University of Delaware	APG	30 March 1996
Harford Community College	APG	30 March 1996
Cecil County Public Schools	APG	22 May 1996
Lincoln University	ALC	6 June 1996
University of California, Los Angeles	APG	6 June 1996
University of Iowa	APG	5 August 1996
United States Military Academy, West Point	ALC	24 February 1997
State of Maryland Department of Juvenile Justice	APG	24 February 1997
John Carroll School	APG	24 February 1997
Lehigh University	APG	24 February 1997
Dartmouth College	ALC	24 February 1997
North Carolina A&T State University	ALC	24 February 1997
Virginia Polytechnic Institute and State University	ALC	24 February 1997
Northeastern University	APG	5 May 1997
Rensselaer Polytechnic Institute	APG	5 May 1997
Mississippi State University	ALC	5 May 1997
Southwestern Indian Polytechnic Institute	APG	5 May 1997
Washington University	ALC	28 May 1997
University of Maryland, Baltimore County	ALC	28 July 1997
Alcorn State University	ALC	2 March 1998
Troy State University	WSMR	17 November 1998
St. Mary of the Mills School	ALC	17 November 1998
City College of the City University of New York	ALC	16 December 1998
Cornell University	ALC	16 December 1998

Small Business Innovation Research

Title
Business Partner   **ARL site**   **No.**

Phase I SBIRs

Title / Business Partner	ARL site	No.
Advanced Active Noise Reduction for Improved Speech Intelligibility in High Noise Level Environments		
Adaptive Technologies and Sycamore Research, Inc.	HRED	A97-005
Natural Speech Processing for Virtual Environments		
Standard Object Systems	HRED	A97-006
Materials or Surface Applications—Treatments for Control of Non-Ionizing Electromagnetic (EM) Radiation		
Eikos LLC. and HVS Technologies	SEDD	A97-007
Computer-Aided Testing for Reliable Ada Software Components		
AET, Inc., and Reliable Software Technologies	ISTD	A97-008
Autofocus for Near-Field UWB (Ultra-Wide-Bandwidth) Synthetic Aperture Radar (SAR) Data		
GORCA Systems, Inc.	SEDD	A97-009
Flexible Membrane Material for Acoustic Signal Management		
SatCon Technology Corp.	WMRD	A97-010
Novel Materials/Materials Structures Development for Thermoelectric Device Applications		
Marlow Industries, Inc.	SEDD	A97-011
High Temperature Dielectrics		
Cree Research, Inc.	SEDD	A97-012
Processing of Nanomaterials for Lightweight Armor Applications		
Materials Modification, Inc.	WMRD	A97-013
Affordable Transmit/Receive Modules for Millimeter Wave Electronics Scanning Antenna Technology		
MicroFab Research, Inc.	SEDD	A97-015
Monitoring of Soldier Load Muscle Fatigue		
Cleveland Medical and Altec, Inc.	HRED	A97-017
Small Arms Shooting Accuracy Measurement System		
Quest Integrated, Inc., and Synetics Corp.	HRED	A97-018
Development of Modular Vehicle Concepts for Scout, Robotic, Light and Heavy Combat Vehicles		
Cybernet Systems	WMRD	A97-020
Foil Bearing Stiffness and Damping Measurement System		
Mohawk Innovative Technologies	VTD	A97-021
Innovative Fuel Cells		
Giner, Inc., Lynntech, Inc., and Maxdem, Inc.	SEDD	A97-133
Smart Fluids		
Systems Planning	CICD	A97-134
Production of Higher Performance Hydrogen-Absorbing Alloys/Composites for Battery Applications		
Technochem Company	WMRD	A97-135
Innovative Aerodynamics	VTD	A97-136
Portable Microwave Nondestructive Systems Gun Tube Wear and Erosion Prevention		
FluiDyne Engineering	WMRD	A97-137

Small Business Innovation Research

Title Business Partner	ARL site	No.
Real-Time Full Field Acoustic Inspection Sensors Santec Systems, Inc.	WMRD	A97-138
Pneumatic Device for the Insertion of Discontinuous Reinforcement into Dry Fiber Preforms pneuVentures, Inc.	VTD	A97-139
Identifier for Individual Biological Particles SPEC and Tacan Corp.	ISTD	A97-140

New Phase II SBIRs

MicroElectroMechanical (MEM) Millimeter-Wave Control Devices for Affordable Scanning Antennas QuinStar Technology, Inc.	SEDD	A95-031
Artificial Intelligence Enhanced Information Processing I-Math Associates	ISTD	A95-032
Development and Testing of a Low-frequency Ultra-wideband Antenna System Designed for Unmanned Aerial Vehicles Mission Research Corp.	SEDD	A96-017
A Real-Time Digital Optical Enhancement System Interscience, Inc.	SEDD	A96-021
Information Assimilation Error Measurement for Digital Displays Cybernet Systems Corp.	HRED	A96-025
Virtual Reality Battle Management Tool for C3 Nets Quality Research	ISTD	A96-026
Integrated Soldier Interface for Hands-Off Control of Head Mounted Display Information Cybernet Systems Corp.	HRED	A96-031
Design and Performance Testing of a Compact 15/1 Compressor ThermoMechanical Systems, Inc.	VTD	A96-147
Hybrid Electric High Mobility Scout "Mongrel" Vehicle with Active Suspension. Davis Technologies International	VTD	A96-150

Ongoing Phase II SBIRs

Advanced Technology Materials BST Capacitors for Cryogenic Focal Plane Arrays	SEDD	A93-084
Powder Injection Molding Processing Using Con-Based Biopolymers 8va Corp.	WMRD	A94-003
Advanced Pressure Infiltration Casting of Thick Section Al Matrix Composites for Armor Applications Metal Matrix Cast Composites, Inc.	WMRD	A94-004
Development and Commercialization of Millimeter-Wave Fiber Optic Links with Continuous RF Phase Control for Phase LGC Technologies, Inc.	SEDD	A94-017

Small Business Innovation Research

Title Business Partner	ARL site	No.
Development of Optical High-Low Energy Laser Ignition System Hi-Shear Technology Corp.	WMRD	A94-020
Enhanced Multimedia Compression for the CTS-III GMA Industries	ISTD	A94-029
Tracenet Tool: Tracing Requirements Through the Later Phases of System Development Computer Command and Control Company	ISTD	A94-057
Extremely Lightweight Fuel Cell Stacks* Analytic Power Corp.	SEDD	A94-071
Advanced Materials for Ultralight PEM Fuel Cell Applications Materials and ElectroChemical Research	SEDD	A94-071
Man Portable Power System Based on Lightweight Monopolar Fuel Cells* Lynntech, Inc.	SEDD	A94-071
Information Filtering for Rapid Battlefield Visualization Charles River Analytics	HRED	A94-076
High-Performance Armor Based on Low-Cost Nanocrystalline Ceramic Powders Materials and Electrochemical Research Corp.	WMRD	A95-003
Development of GaN/AlGaN HEMTs on Silicon Carbide Cree Research, Inc.	SEDD	A95-016
Multiphase Nanocomposites for Optical Power Limiting Laser Photonics Technology, Inc.	SEDD	A95-030
Network Simulation of Technical Architecture Prediction Systems, Inc.	ISTD	A95-062
Hybrid Foil/Magnetic Bearing Mohawk Innovative Technology, Inc.	VTD	A95-074
A Comprehensive FEA Model for Design Optimization of Protective Masks Visual Sciences	HRED	A95-099
Field Deployable Electron Beam Dry Scrubbing System Berkeley Research Associates, Inc.	WMRD	A95-101
Thin Film Conductive Matrices for Electrochemical Biosensors EIC Laboratories		A96-020
Controlled-Temperature Induction Heating of Composite Armor Triton Systems	WMRD	A96-027
Liquid Molded Composite Armor Smart Structures Using Embedded Sensors Production Products MFG and Sales, Inc.	WMRD	A96-145

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*Army FY98 Phase II Quality Award Winner.

Cooperative Research and Development Agreements and Patent License Agreements

CRDAs

Title Business partner/ARL site	Date enacted	No.
Durability and Damage Tolerance Coupon Test Program Raytheon Aircraft Company/VTD	6 October 1997	9710-A-C129
Modeling and Measurements for Electrostatic Field Mill Calibrations Aeromet, Inc./SEDD	24 October 1997	9710-A-C134
Silicon Carbide Material Development and Evaluation Cree Research, Inc./SEDD	29 October 1997	9710-A-C135
Development of an Advanced Medical Team Communications System TEMCO Communications, Inc./HRED	23 February 1998	9802-A-C192
Millimeter Wave Microstrip Circulator Quinstar Technology, Inc./SEDD	6 March 1998	9803-A-P214
Characterization of Circuit Board Surfaces Using Surface Spectroscopy American Competitiveness Institute/WMRD	13 April 1998	9804-A-C231
Enhancement of EOSAEL (Electro-Optical Systems Atmospheric Effects Library) Model Ontar Corp/IS&T	9 April 1998	9804-A-C232
Optimization of SSAB Steels for Ballistic Applications SSAB Oxelosund AB, WTD	20 April 1998	9804-A-C240
Application of Auditory Algorithms for Acoustic Identification of Military Targets Univ of MD/SEDD	29 April 1998	9805-A-C250
Advanced Electron Beam Water Treatement Univ of the District of Columbia and Clean Earth Technologies, LLC/SEDD	7 May 1998	9805-A-C251
The Effects of Fatigue and Environmental Stressors on Ability of Humans to Perform Cognitive Tasks The College of New Jersey/HRED	2 June 1998	9806-A-C268
Process Development, Testing and Proof of Concept for the Manufacture of Composite Materials and Structures Materials Sciences Corp/WMRD	8 June 1998	9806-A-C269
Experimental Measures of Blast and Acoustic Trauma in Marine Mammals Woods Hole Oceanographic Institiue/HRED	22 July 1998	9807-A-C300
Development and Dual Use Assessment of Transparent MGAL204 Spinel Ceramic Composites, Inc./WMRD	29 July 1998	9808-A-C316

PLAs

Title Business partner/ARL site	Date enacted	No.
Acoustic Monitoring System Personal Electronics Devices Inc./SEDD	29 April 1998	9808-A-P317
Fluxless Soldering Method Integrated Electronic Innovations/SEDD	17 September 1998	9809-A-P344

Patents

Figure 1. Diagram of tetrahedral scattering system.

Source: Gorden Videen, Wenbo Sun, and Qiang Fu, *Light Scattering from Irregular Tetrahedral Aggregates*, ARL-TR-1726.
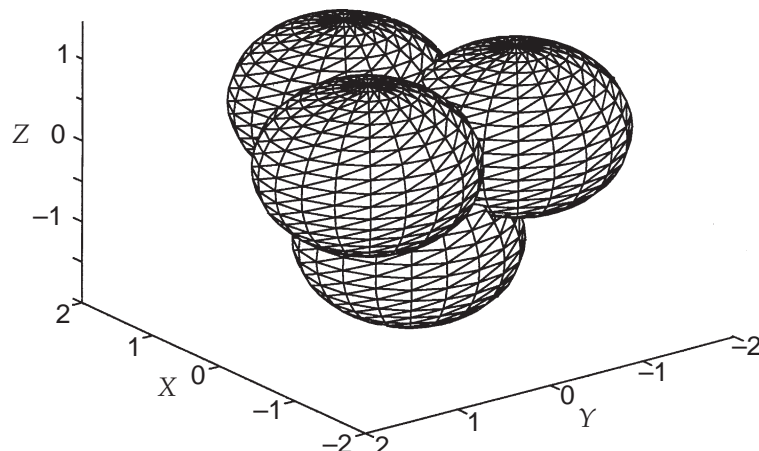
Patents

Field-Controlled Current Modulators Based on Tunable Barrier Strengths
Gerald J. Iafrate, Jun He, Mitra Dutta, and Michael A. Stroscio
5,705,824   6 January 1998

A Variable Optical Focusing Method for Processing Chamber
Somnath Sengupta
5,711,810   27 January 1998

Spherical Magnet Having a Gap With a Periodically Varying Field for a Wiggler Radiation Source
Herbert A. Leupold
5,719,469   17 February 1998

Simulator for Smart Munitions Testing
Mark Sevachko
5,719,797   17 February 1998

Spherical Magnet Structure and Use Thereof in Wiggler Radiation Source
Herbert A. Leupold
5,723,949   3 March 1998

Method and Apparatus for Determining Ocular Gaze Point of Regard and Fixation Duration
Christopher Smyth
5,726,916   10 March 1998

A Sensitive Device and Process for Detection of Nitro Compounds Employing Excimer Laser Radiation
Josef Simeonsson, et al
5,728,584   17 March 1998

Recognition Tag for Use in a System for Identifying Distant Items
William J. Skudera, Jr.
5,734,326   31 March 1998

Butterfly Actuated Quick Coupling Connector Valve
Jim A. Faughn
5,738,143   14 April 1998

Ultra-Wideband Photonic Band Gap Crystal Having Selectable and Controllable Band Gaps and Methods for Achieving Photonic Band Gaps
Louis J. Jasper, Jr., Lawrence Carin, and K. Ming Leung
5,739,796   14 April 1998

Kinetic Energy Projectile With Fin Leading Edge Protection Mechanisms
Ameer G. Mikhail
5,744,748   28 April 1998

Chemical and Biological Sensor Based on Microresonators
John R. Vig
5,744,902   28 April 1998

Built-In Self Testing for the Identification of Faulty Integrated Circuit Chips in a Multichip Module
Thyagaraju Damarla, Moon J. Chung, Wei Su, and Gerald T. Michael
5,745,500   28 April 1998

Infrared/Optical Imaging Techniques Using Anisotropically Strained Doped Quantum-Well Structures
Paul H. Shen, Mitra Dutta, Michael Wraback, and Jagadeesh Pamulapati
5,748,359   5 May 1998

Optical Turbulence Characterizer and Simulator
Wendell R. Watkins, Fernando R. Palacios, Daniel Billingsley, and Jay B. Jordan
5,756,990   26 May 1998

A Sensor for Detecting Trace Underground Energetic Materials
Rosario C. Sausa
5,759,859   2 June 1998

Holographic Microscope for Phase Imaging
Philip S. Brody
5,760,902   2 June 19988

Drag Control Module for Stabilized Projectiles
Michael Hollis and Fred J. Brandon
5,762,291   9 June 1998

Fast High-Signal-to-Noise Ratio ET (Equivalent Time) Priocessor for Use With Transient Digitizers
John W. McCorkle
5,764,551   9 June 1998

Novel Thin Film Composite of BSto-MgO Based Compounds
Louise C. Sengupta and Somnath Sengupta
5,766,697   16 June 1998

Method for Making Monolithically Integrated Signal Processing Circuit Having Active and Passive Components
Weimin Zhou, Paul H. Shen, Mitra Dutta, and Jagadeesh Pamulapati
5,770,472   23 June 1998

Ultrafast, High Voltage Pulser Using Circumferentially Illuminated, Laser-Switched Radial Transmission Line
Lawrence E. Kingsley, Maurice Weiner, Hardev Singh, and William R. Donaldson
5,773,817   30 June 1998

Guided Artillery Projectile and Method
John R. Vig and Steven W. Waugh
5,775,636   7 July 1998

Patents

Digital Microelectronic Circuit Package Using Buffer Dies and Programmable Device or Memory Dies
Michael A. Dukes, Kenneth J. Keyes, and Gerald T. Michael
5,781,791   14 July 1998

Fuel Cell Including a Single Sheet of a Polymer Electrolyte Membrane (PEM), the PEM Being Divided into Regions of Varying Electrical and Ionic Conductivity
Michael Binder, Sol Gilman, and Robert J. Mammone
5,783,324   21 July 1998

Active/Passive Signature Enhancer (APSE)
Marcos C. Sola
5,784,196   21 July 1998

Frequency Agile Filter and Technique
Gary L. Wood
5,784,191   21 July 1998

Phase and Magnitude Compensated Tuning for Suppression of Vibration Induced Phase Noise of Crystal Oscillator With Varying Vibration Frequencies
Wei Su
5,786,735   28 July 1998

Method for Producing Films of Uniform Thickness by Ion-Assisted Deposition
Wolfgang Franzen
5,789,041   4 August 1998

A Method for Improved Representation of Terrain and Terrain-Related Phenomena
Joseph K. Wald, Carolyn J. Patterson, and MaryAnne Fields
5,790,123   4 August 1998

Recursive Frequency Aging Estimation and Prediction Devices, Methods and Computer Programs for Crystal Oscillators
Wei Su
5,790,412   4 August 1998

A Genetic Algorithm-Based Technique for Multisensor, Multitarget Tracking
David B. Hillis
5,793,931   11 August 1998

Method of Making Composite Electrode Materials for High-Energy and High-Power Density Energy Storage Devices
Jian-Ping Zheng and T. Richard Jow
5,797,971   25 August 1998

Thickness Mode Acoustic Wave Resonator
Dana J. Sturzebecher, John A. Kosinski, Arthur Ballato, Paul W. Cooke, and Hong-Liang Cui
5,801,476   1 September 1998

Field Free Chamber in Parmanent Magnet Solenoids
Herbert A. Leupold
5,805,044   8 September 1998

Fast Multiresolution Backprojector
John W. McCorkle
5,805,098   8 September 1998

Test Fixture for Determination of Energy Absorption Capabilities of Composite Materials
Karen E. Jackson, John Morton, and Andre J. Lavorie
5,811,686   22 September 1998

Quantum Well Optical Waveguide Phase Shifter
Maden Dubey, Hong Liang Cui, Charles D. Hechtman, Norman J. Horing, and George F. McLane
5,811,830   22 September 1998

Method for Fabricating a Split Path Transmission System Providing Equal Torque Splitting Between the Split Load Paths of Each Gear Train Thereof at a Predefined Operating Point
Timothy L. Krantz
5,813,292   29 September 1998

Compounds in the Series A_2MeSbO_6 for Use as Substrates, Barrier-Dielectric Layers and Passivating Layers in High Critical Temperature Superconducting Devices
Arthur Tauber, William D. Wilber, Steven C. Tidrow, Robert D. Finnegan, and Donald W. Eckart
5,814,584   29 September 1998

Journal Articles and Presentations

Abou-Auf, A., B. Stann, W. Ruff, and M. Sun.
Ground Estimation Techniques for FM/CW Ladar Used in Smart Munitions.
GOMAC Digest of Papers, XXIII (16 March 1998).

Abou-Auf, A., S. Lang, P. Flore, B. Stann, and W. Ruff.
Novel Ground Estimation Techniques for FM/CW Ladar Used in Smart Munitions.
Proceedings of the FedLab Symposium (28 February 1998), pp 271–277.

Abouchacra, Kim.
Signal Perception of Speech in Various Signal-to-Noise Ratio.
Ear and Hearing, **19**, 4 (30 August 1998), pp 298–309.

Adomian, G., R. C. Rach, and R. E. Meyers.
Numerical Integration, Analytic Continuation, and Decomposition.
Applied Mathematics and Computation.

Ahearn, J., and H. Pollehn.
Multi-Domain SMART Sensor, 1997 Program Review.
Proceedings of the FedLab Symposium
(28 February 1998), pp 1–5.

Anderson, Wayne B.
Auditory Capabilities of Military Helmets.
The Design and Integration of Helmet Systems, National Defense Industrial Association (4 December 1997), pp 221–222.

Anderson, Wayne B.
Use of Chemical Mask and Hood With Tankers and Aviators Helmets.
Proceedings of the Design and Integration of Helmet Systems, National Defense Industrial Association
(5 December 1997), pp 493–499.

Bahder.
Correlations Between GPS and USNO Master Clock Time.
IEEE, **34** (30 June 1998), pp 6–11.

Barnes, Michael J.
Battle Space Visualization: A Multi-View Approach.
ARL-FedLab Second Annual Advanced Display Symposium, **1** (4 February 1998), pp 1–5.

Barnes, Michael J.
The Commander's Ability to Visualize Battle Spaces—A Multi-View Approach.
Federated Lab Display Conference Proceedings
(3 February 1998), pp 1–5.

Barnes, Michael J.
Generation of Visualization Tools for Three-Dimensional Planning in a Joint Task Force (JTF) Scenario.
66th Military Operations Research Society Symposium (MORSS) (24 June 1998).

Barnes, Michael J.
Intelligent Animated Planning World (IAPW).
66th Military Operations Research Society Symposium (MORSS) (24 June 1998).

Barnes, Michael J.
Visualizing Course-of-Action (COA) for Future Battlespaces.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Barnette, Diane B.
Object-Oriented Task Workload and Information Processing Model.
66th Military Operations Research Society Symposium (MORSS) (24 June 1998).

Beck, W., M. Mirotznik, and T. Faska.
Antenna Structures for Optical Coupling in Quantum-Well Infrared Detectors.
Long Wavelength Infrared Detectors and Arrays: Physics and Applications V (31 January 1998),
pp 48–62.

Beck, W., M. Mirotznik, and P. Uppal.
Design of QWIP Optical Coupling Structures for MDSS.
Proceedings of the FedLab Symposium
(28 February 1998), pp 30–34.

Beekman, D., C. Cooke, A. Goldberg, S. Kennerly, R. Leavitt, J. Little, L. Lucas, and K. Olver.
Comparison of MBT and BTQB Quantum-Well Infrared Photodetectors and Their Implications for Multi-Color Design.
Proceedings of the FedLab Symposium
(28 February 1998), pp 83–87.

Beekman, D., J. Little, S. Kennerly, A. Goldberg, and T. Faska.
Systematic Study of Quantum-Well Infrared Photodetector Performance Parameters vs. Design Parameters.
Advance Sensors Consortium (28 February 1998),
pp 40–43.

Beekman, D., J. Little, S. Kennerly, A. Goldberg, and T. Faska.
Systematic Study of Quantum-Well Infrared Photodetector Performance Parameters vs. Design Parameters.
Proceedings of SPIE Infrared Detectors and Focal Plane Array V, **3379** (31 August 1998), pp 453–460.

Behl, W., and E. J. Plichta.
Corrosion of Aluminum Substrates in Lithium Ion Cells.
56th Lithium Battery Technical/Safety Group Meeting,
56 (1 November 1997), pp 218–227.

Behl, W., and E. J. Plichta.
Stability of Aluminum Substrates in Lithium-Ion Battery Electrolytes.
Journal of Power Sources, **72**, 2 (1 April 1998),
pp 132–135.

Journal Articles and Presentations

Birk, A., and D. E. Kooker.
A Ballistic Compressor-Based Experiment for the Visualization of Liquid Propellant Jet Combustion Above 100 Mpa.
Experiments in Fluids, **24**, 3 (1 March 1998),
pp 185–191.

Boesch, Ed, and Bruce Benwell.
A High-Power Electrically Driven Impulsive Acoustic Source for Bioeffects Experiments and Area Denial Applications.
Nonlethal Defense III Conference, (www.dtic.mil/stinet/ndia/nld3.html) (28 March 1998).

Brandt, Howard.
Introduction to Intense Microwave Pulses V.
Intense Microwave Pulses V, 3158, VIIII-XI,
(1 October 1997).

Brandt, Howard.
Quantum Field in the Spacetime Tangent Bundle.
Foundation of Physics Letters, **II**, 3 (1 June 1998),
pp 265–275.

Brodeen, A.
FALCON: A Machine Translation Support Tool for Nonlinguists.
66th Military Operations Research Society Symposium (MORSS), Monterey, CA (June 1998).

Brodeen, A., J. Brand, and M. Lopez.
Network Analysis Using the Virtual Reality C^3 Net Battle Management Tool.
AORS XXXVII, Ft Lee, VA (October 1998).

Brodeen, A., G. Harwig, and M. Lopez.
Multistage Command and Control System Evaluation.
1998 Command and Control Research and Technology Symposium, Monterey, CA (29 June–1 July 1998).

Bullock, Charles, D.
Environmentally Friendly, Lead-Free Primer Feasibility Study.
1998 JANNAF Propulsion Meeting (16 July 1998),
pp 151–156.

Bunte, S. W., B. M. Rice, and C. F. Chabalowski.
An Ab Initio QCISD Study of the Potential Energy Surface for the Reaction HNO+NO->N2O+OH.
Journal of Physical Chemistry, A, **101,** 49
(1 December 1997), pp 9430–9438.

Celmins, A. K.
Fuzzy Control of Robot Communications.
Proceedings of U.S. Army Conference on Applied Statistics, Fairfax, VA (22–24 October 1997).

Celmins. A. K.
The Method of Gauss in 1799.
Statistical Science, **13** (May 1998), pp 123–135.

Chamberlain, S.
Technical Foundations for Emerging Battlefield Information Management.
4th International Command & Control Research & Technology Conference, Nasby Slott, Sweden
(14–16 September 1998).

Champagne, V. K.
Failure Analysis of an Age Hardenable, Nickel Base Superalloy Barrel Nut from an Army Attack Helicopter, ASTM STP 1337,
Effects of Product Quality and Design Criteria on Structural Integrity (1 July 1998).

Chan, Lipchen Alex, and Nasser Nasrabadi.
An Application of Wavelet-Based Vector Quantization in Target Recognition.
International Journal on Artificial Intelligence Tools, **6**, 2 (1 December 1997), pp 165–178.

Chan, Lipchen Alex, Nasrabadi, and Torreri.
Discriminative Eigen Targets for Automatic Target Recognition (Paper).
SPIE Aerosense '98, **3371-41** (17 April 1998),
pp 334–345.

Chang, R., G. Chen, S. C. Hill, G. Videen, and R. Pinnick.
Discrimination of Bioaerosols From Nonbioaerosols With Fluorescence Techniques.
16th Annual Conference of the American Association of Aerosol Research, Denver, CO (13–17 October 1997).

Chen, C. H., K. K. Choi, W. H. Chang, and D. C. Tsui.
Corrugated Infrared Hot-Electron Transistors.
Applied Physics Letters, **73** (1 August 1998),
pp 1272–1275.

Chen, C. H., K. K. Choi, W. H. Chang, and D. C. Tsui.
Corrugated Quantum-Well Infrared Photodetectors With Polyimide Planarization for Detector Array Applications.
IEEE Transactions on Electron Devices, **45**
(1 July 1998), pp 1431–1433.

Chen, C. H., K. K. Choi, W. H. Chang, and D. C. Tsui.
Performance of Corrugated Quantum-Well Infrared Photodetectors.
Applied Physics Letters, **71** (24 November 1997),
pp 3045–3047.

Chen, C. H., K. K. Choi, W. H. Chang, and D. C. Tsui.
Two-Color Corrugated Quantum-Well Infrared Photodetector for Remote Temperature Sensing.
Applied Physics Letters, **72** (5 January 1998), pp 7–9.

Journal Articles and Presentations

Choi, K. K., C. J. Chen, W. H. Chang, and D. C. Tsui.
Corrugated Quantum-Well Infrared Photodetectors and Transistors.
Inter-Subband Transistor Quantum Wells (1 July 1998), pp 728–739.

Choi, K. K., C. J. Chen, A. Goldberg, W. H. Chang, and D. C. Tsui.
Performance of Corrugated Quantum-Well Infrared Photodetectors.
SPIE Conference Proceedings, **3379** (1 July 1998), pp 441–452.

Choi, K. K., A. Goldberg, N. Das, and M. Jhabula.
Corrugated QWIP Array Fabrication and Characterization.
Proceedings of SPIE, **3287** (28 January 1998), pp 118–127.

Chu, Deryn.
The ARL Direct Methanol Fuel Cell R&D Program.
DARPA Direct Methanol Fuel Cell Workshop
(1 November 1997).

Chu, Deryn.
Evaluation of Single-Cell and Stacked Polymer Electrolyte Membrane Fuel Cells.
The Second International Fuel Cell, **2**
(1 September 1998), pp 190–194.

Chu, Deryn.
The High Performance Polymer Electrolyte Membrane Fuel Cell (PEMFC) for Army Applications.
Proceedings of 21st Army Science Conference, Session VI, 165 (1 June 1998).

Chu, Deryn, and Louis Jarvis.
The Electrochemical Performance of 100-Watt Polymer Electrolyte Membrane Fuel Cell and Single Cells.
Proceedings of the 38th Power Sources Conference
(1 June 1998) pp 428–431.

Chylek, P., and G. Videen.
Scattering by a Composite Sphere and Effective Medium Approximations.
Optics Communications, **146** (January 1998), pp 15–20.

Cionco, R. M., and J. H. Byers.
High Resolution Wind Field Simulations Run Real-Time During the MADONA Field Study.
1997 Battlefield Atmospherics Conference, San Diego, CA (2–4 December 1997).

Cionco, R. M., and J. H. Byers.
Influence of Airfield Structures and Complex Terrain Upon Simulated Wind Fields.
12th Symposium on Boundary Layers and Turbulence, Vancouver, Canada (1998).

Cionco, R. M., and R. Ellefesen.
High Resolution Urban Morphology Data for Urban Wind Flow Modeling.
Atmospheric Environments, **32** (1998), pp 7–17.

Cionco, R. M., G. Steele, and G. Moran.
Remote Sensing of Wind Profiles Within and Above an Urban Domain.
2nd Symposium on the Urban Environment, Albuquerque, NM (June 1998).

Cogan, J., E. Measure, and D. Wolfe.
Atmospheric Soundings in Near Real Time From Combined Satellite and Ground-Based Remotely Sensed Data.
Journal Atmospheric and Oceanic Technology, **14** (October 1997), pp 1127–1138.

Cogan, J., W. Gutman, E. Measure, D. Bustamante, and G. Vaucher.
Neural Networks for Wind Velocity From Satellite Data.
First International Conference on Multisource-Multisensor Fusion, Las Vegas, NV (6–9 July 1998).

Cogan, J., E. Measure, W. Gutman, G. Vaucher, and D. Bustamante.
Neural Network Methods for Wind Velocity Profiles From Satellite Data.
First International Conference on Multisensor Information Fusion, Las Vegas, NV (July 1998).

Cogan, J., E. Measure, E. Vidal, G. Vaucher, E. Creegan, and B. Weber.
A Near-Portable System for Near Real-Time Atmospheric Soundings Through Fusion of Satellite and Ground-Based Remote Sensing.
First International Conference on Multisensor Information Fusion, Las Vegas, NV (July 1998).

Cohen, Kathryn S.
Relationship of Protective Mask Seal Pressure to Fit Factor and Head Harness Strap Stretch.
Master's thesis, University of Maryland, Baltimore County (15 April 1998), pp 1–130.

Cohen, Kathryn S.
Relationship of Protective Mask Seal Pressure to Fit Factor.
SAFE Association - 1998 Annual Symposium
(15 September 1998).

Cole, M. W., F. Ren, and S. J. Pearton.
Materials Characterization of WSi Contacts to n+-GaN as a Function of Rapid Thermal Annealing Temperatures.
Journal of the Electrochemical Society, **144**, 10
(1 October 1997), pp L275–277.

Journal Articles and Presentations

Cole, M. W, F. Ren, and S. J. Pearton.
Post Growth Rapid Thermal Annealing of GaN: The Relationship Between Annealing Temperature, GaN Crystal Quality and Contact-GaN Interfacial Structure.
Applied Physics Letters, **71,** 20 (1 December 1997), pp 3004.

Cooper, A. B. III.
Communications and Information Theory.
Subchapter of The CRC Handbook of Mechanical Engineering (1998).

Cooper, A. B. III.
Sequence Demodulation in Impulsive Noise.
Conference to Honor Prof. P. G. Farrell, Lancaster, United Kingdom (13 January 1998).

Cooper, A. B. III.
Sequence Demodulation in Impulsive Noise.
International Conference on Telecommunications, Chalkidiki, Greece (22–25 June 1998).

Cooper, G. R., K. S. Fansler, and V. Oskay.
Extracting Meteorological Data from Projectile Trajectory.
Journal of Spacecraft and Rockets, **34**, 6 (1 November 1997), pp 769–773.

Coulon, M., J-Y Tourneret, and A. Swami.
Detection of Spectrally Equivalent Parametric Processes Using Higher-Order Statistics.
Proceedings ICASSP-98, **IV**, Seattle, WA (May 1998), pp 2153–56.

Crissey, Mona J.
Essential Training Needs and Resources for Simulation Observers/Controllers.
19th I/ITSEC Conference (3 December 1997), pp 118–129.

Crowell, III, Harrison P.
Soldier Performance on Various Terrain.
66th Military Operations Research Society Symposium (MORSS) (24 June 1998).

Damarla, T. Raju, and Prawat Nagvajara.
Signature Analysis for Analog Circuits.
IEEE Mixed Signal Testing Workshop (1 June 1998), pp 107–112.

Decrozant, L., and C. Voss.
Cross-Linguistic Resources for Language Training and Machine Translation Evaluation.
Proceedings of the Natural Language Processing and Industrial Applications, 1, Moncton, New Brunswick, Canada (August 1998), pp 91–95.

Deluca, Marinelli, Ressler, and Ton.
Unexploded Ordnance Detection Experiments Using Ultra-Wideband Synthetic Aperture Radar.
SPIE Proceedings 1998, **3392** (1 April 1998), pp 668–677.

Der, Sandor, and Nasser Nasrabadi.
Combination of Two Learning Algorithms for Automatic Target Recognition.
Proceedings of the 1997 IEEE International Conference on Image Processing, **I**, CD (30 October 1997).

Der, Sandor, and Qinfen Zheng.
Empirical Evaluation of Laser Radar Recognition Algorithms Using Synthetic and Real Data.
IEEE CVPR workshop on Empirical Methods in Computer Vision (1 June 1998), pp 135–147.

Dorr, B., and C. R. Voss.
A Multi-Level Approach to Interlingual Machine Translation: Defining the Interface Between the Representational Languages.
Natural Language Processing and Knowledge Representation: Language for Knowledge and Knowledge for Language.
Stuart Shapiro and Lucja Iwanska, eds., MIT/AAAI Press, Cambridge, MA (1998).

Dowding, R. J., S. Yoo, M. S. Krupashankara, and T. S. Sudarshan.
Ultra High Pressure Consolidation of W-Cu Composites.
Materials Science and Technology, **14** (1 February 1998), pp 170–74.

Eliseev, P., M. Osinski, K. Ritter, and P. Uppal.
Design of Unipolar Mid-Infrared Lasers in the GaN/ AOM/InN Material System.
Proceedings of the FedLab Symposium (28 February 1998), pp 74–78.

Euliss, G.
Temporal Bandwidth of a Self-Imaging Waveguide Splitter.
Technical Digest Annual Meeting of OSA (1 October 1997), p 117.

Euliss, G.
Measurement of Output Phase Relationships of Multi-mode Interference Splitters Using a Shering-Type Near-Field Sagnac Interferometer.
Proceedings of LEOS 97 (1 November 1997), pp 401–402.

Ewing, K. L., C. M. Spellman, D. Dagenais, F. Bucholtz, I. D. Aggarwal, N. Gupta, and R. Dahmani.
Application of a Collinear AOTF Spectrometer to the Detection of Trace Levels of Chemical Warfare Agents and Their Environmental Breakdown Products via Raman Spectroscopy.
OSA Annual Meeting, Longbeach CA (1 October 1997), p 98.

Journal Articles and Presentations

Fell, N. F., J. A. Vanderhoff, R. A. Pesce-Rodriguez, and K. L. McNesby.
Characterization of Raman Spectral Changes in Energetic Materials and Propellants during Heating.
Journal of Raman Spectroscropy, **29**, 3 (1 March 1998), pp 165–172.

Fielding, A. J., and C. C. Davis.
Fluorescent Porous Sol-Gel Coatings for Near-IR Single Mode Fiber Chemical Sensors.
SPIE Micro- and Nanofabricated Structures and Devices for Biomedical Environmental Applications, **3258** (31 January 1998), pp 91–97.

Folks, Patrick, and Godfrey Gumbs.
Low-Temperature GaAs Induced Substrate Voltage in a Modulation-Doped Field Effect Transistor.
APS March Meeting, **43** (31 March 1998), pp 427–430.

Gazonas, G. A.
Render Safe Impact Dyanmics of the M557 Fuze, Structures Under Shock and Impact V.
Computational Mechanics Publications, pp 341–354.

Gerber, Miller, Ludwig, and Hillis.
Sniper Detection Technology.
Proceedings of the Third NATO/IRIS Joint Symposium (October 1998).

Ghogho, M., and A. Swami.
Lower Bounds on the Estimation of Harmonics in Colored Noise.
Proceedings of the Asilomar-97, Pacific Grove, CA (November 1997), pp 478–482.

Ghogho, M., A. Nandi, and A. Swami.
Identification of Volterra Kernels Using Circular Inputs.
Proceedings of the IEEE Colloqium on Non-Linear Signal and Image Processing, London (May 1998).

Ghosh, Razouki, Schumacher, and Celmins.
A Survey of Recent Advances on Fuzzy Logic in Tele-communications Networks and New Challenges.
IEEE Transactions on Fuzzy Systems, **6**, pp 443–447 (August 1998).

Gillen, G., R. Lareau, J. Bennett, and F. Stevie.
Secondary Ion Mass Spectrometry Sims XI.
Wiley, Chichester, England (1 March 1998).

Gillespie, J., D. Rosen, P. Pellegrino, and N. Fell.
Bacterial Endospore Detection for Bioagent Alarms by Use of Terbium Dipicolinate Photoluminescence.
21st Army Science Conference, Norfolk, VA (15–27 June 1998).

Gillespie, J. W., Jr, S. H. McKnight, S. T. Holmes, C.L.T. Lambing, and J. M. Marinelli.
Scaling Issues in Resistance-Welded Thermoplastic Composite Joints.
Advances in Polymer Technology, **16**, 4 (1 October 1997), pp 279–295.

Gillespie, Patti, Alan Wetmore, David Ligon, Kristan Gurton, and Michael Seablom.
HLA Compliant 3-D Total Atmospheric Simulations: Smoke and Obscurants in the Real Atmosphere.
Proceedings of the Smoke and Obscurants Symposium XX (28–30 April 1998).

Gillespie, Patti, Alan Wetmore, David Ligon, Kristan Gurton, and Michael Seablom.
HLA Compliant 3-D Total Atmospheric Simulations.
Proceedings of the International Test and Evaluation Association Symposium, Aberdeen Proving Ground, MD (14–16 July 1998).

Gillespie, Patti, Alan Wetmore, John Schroeder, and Andrew McCann.
EOSAEL-Current Work and Future Directions.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Goedecke, G. H., and H. J. Auvermann.
Acoustic Scattering by Atmospheric Turbules.
Journal of the Acoustic Society of America, **102**, 2, Pt 1 (October 1997), pp 759–771.

Goldberg, A., J. Little, R. Leavitt, and P. Uppal.
Electron Transport Properties in Quantum-Well Infrared Photodetectors.
Proceedings of the FedLab Symposium (28 February 1998), pp 49–53.

Golden, Michael G.
Performance-Based Metrics to Assess the Effects of Digitization During Division XXI Advanced War-Fighting Experiment (DAWE XXI).
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Gray, A., L. Lester, and A. Stintz.
Strain Limits in ALxGA1-xAS/INyGA1-yAS Quantum-Well Intersubband Photodetectors as Determined by Diffraction Space Maps and Transmission Electron Microscopy.
Proceedings of the FedLab Symposium (28 February 1998), pp 62–65.

Grendahl, S. M.
Metallurgical Examination of a Failed Nut from an Army Attack Helicopter.
American Fastener Journal, **4**, 2 (6 January 1998).

Gruber, J., B. Zandi, and L. Merkle.
Crystal-Field Splitting of Energy Levels of Rare-Earth Ions Dy3+(4f9) and Yb3+(4f13) in M(II) Sites in the Fluorapatite Crystal Sr5(PO4)3F.
Journal of Applied Physics and Chemistry of Solids, **83**, 2 (15 September 1998) pp 1453–1457.

Journal Articles and Presentations

Grynovicki, Jock O.
Performance-Based Metrics to Assess Battlefield Visualization: Prairie Warrior 97—Maneuver Control System (MCS).
66th Military Operations Research Society Symposium (MORSS) (23 June 1998).

Gupta, N.
Lithium Niobate Integrated-Optics Demonstration of Optical Control of Microwaves.
Selected Papers on Photonic Control System for Phased Array Antennas. SPIE Optical Engineering Press, Bellingham WA, N. A. Riza, ed. (31 October 1997), pp 111–119.

Gupta, N., and R. Dahmani.
Acousto-Optic Sensing and Imaging for Biomedical Applications.
IEEE Engineering in Medicine and Biology Society (31 October 1997), pp 702–703.

Gupta, N., and R. Dahmani.
AOTF Spectrometer for Water Pollution Monitoring.
IEEE Engineering in Medicine and Biology Society (1 November 1997), pp 751–752.

Gurton, K. P., and C. W. Bruce.
Development of a Caloric Technique for Measuring the Absorption Cross Section of Rigid Bodies-Case Study: Carbon Fiber.
Review of Scientific Instruments, **68**, 11 (November 1997), pp 4084–4089.

Gutbrod, T., M. Bayer, A. Forshel, J. Reithmaier, T. Reinecke, and S. Rudin.
Weak and Strong Coupling of Photons and Excitons in Photonic Dots.
Physical Review B, **57** (1 February 1998), p 9950.

Haas, Ellen C.
3-D Audio Displays in Helicopter Systems.
21st Army Science Conference (16 June 1998), pp 121–126.

Haas, Ellen C.
Utilizing 3-D Audio Displays to Enhance Safety in Systems With Multiple Radio Communications.
Occupational Ergonomics and Safety Conference (12 September 1998), pp 715–718.

Haetty, J., M. Salib, M. Dutta, T. Schmiedel, J. Pampulapati, P. G Newman, and K. K. Bajaj.
Magnetic Field Induced Localization of Carriers in Al0.25Ga0.75As/AlAs Multiple Quantum-Well Structures.
Physical Review B, **56** (1 November 1997), pp 12364–12368.

Haines, P. A.
NATO Artillery Mesoscale Meteorological Prediction Model.
Enclosures to the minutes of the 2nd joint meeting between NAAG AC/225 LG4, SG2 on Ballistics and MCMG WG-BMSS on technologies to enhance artillery accuracy at ranges greater than 30 km, Brussels, Belgium (March 1998).

Haines, P. A., J.-D. Chern, and W.-Y. Sun.
Numerical Simulation of the Valentine's Day Storm During the 1990 Winter Icing and Storms Project.
TELLUS, 49A (October 1997), pp 595–612.

Hammell II, R., and T. Sudkamp.
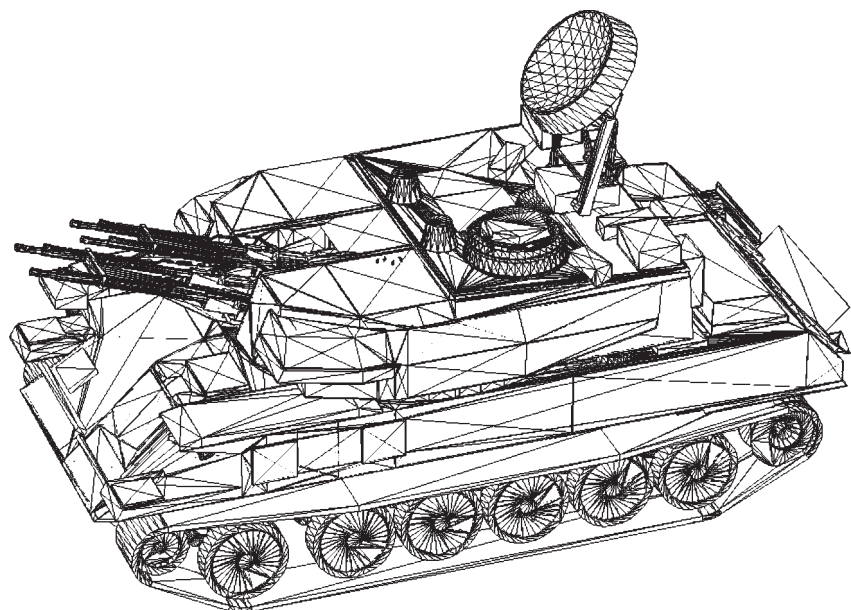*A Fuzzy Model for Learning and Adaptivity.*
Proceedings of the International Conference on Tools With Artificial Intelligence (4–7 November 1997), pp 540–547.

Figure 2. Facet model of the ZSU at 30° depression angle and 290° in azimuth angle.

Source: Ronald Chase, H. Bruce Wallace, and Thomas Blalock, *Numerical Computation of the Radar Cross Section of the ZSU-23-4*, ARL-MR-430.

Journal Articles and Presentations

Hammell II, R., and T. Sudkamp.
Granularity, Dimensionality, and Learning Fuzzy Rules.
Proceedings of the 21st Army Science Conference,
Norfolk, VA (15–18 June 1998).

Hammell II, R., and T. Sudkamp.
Learning Fuzzy Rules From Data.
NATO Mission Systems Panel 9th Symposium on the
Application of Information Technologies to Mission
Systems, Monterey, CA (April 1998).

Harrah, David H.
Modeling and Evaluating the Air Warrior Ensemble.
SAFE Association 1998 Annual Symposium
(15 September 1998).

Heid, C., G. Wood, B. Ketchel, G. Salamo, and
R. Anderson.
*Three Dimensional Holographic Display Using a
Photorefractive Crystal.*
SPIE Sixth International Symposium on Display
Holography, **3358** (31 March 1998), p 357.

Helfman, Baur, Dumer, Hanratty, and Ingham.
TED: An Expert Diagnostic System for the M1.
Proceedings of the Innovative Applications of AI
Conference, Madison, WI (July 1998).

Henmi, Teizi.
Battlescale Forecast Model (BFM) and Its Evaluation.
1998 Army After Next Tactical Decision Aids Sympo-
sium, El Paso, TX (14–16 April 1998).

Henmi, Teizi.
*Battlescale Forecast Model at Ft. Irwin, CA, and
Statistical Evaluation of 24-Hour Forecast Fields.*
Proceedings of the 1997 Battlespace Atmospherics
Conference, San Diego, CA (2–4 December 1997).

Henry, M., C. B. Silio, and A. B. Cooper III.
Concurrent Communication in Ring Networks.
Proceedings of the 1998 Conference on Information
Sciences and Systems, Princeton University, Boston,
MA (March 1998).

Hill, S. C., M. D. Barnes, W. B. Whitten, and
J. M. Ramsey.
*Stimulation of Single Molecule Photocount Statistics in
Microdroplets.*
Optical Society of America Annual Meeting, Long
Beach, CA (17 October 1997).

Hill, S. C., M. D. Barnes, W. B. Whitten, and
J. M. Ramsey.
*Simulation of Single Molecule Photocount Statistics in
Microdroplets.*
Analytical Chemistry, **70** (September 1998), pp 2964.

Hill, S., N. Fell, R. Pinnick, S. Niles, G. Videen,
S. Holler, and R. Chang.
*Conditionally Fired and Stored Aerosol Fluorescence
Spectrum Analyzer for Investigation of Airborne
Particles.*
American Association of Aerosol Research Annual
Meeting, Cincinnati, OH (22–26 June 1998).

Hill, S., R. Pinnick, N. Fell, R. Chang, S. Holler, Y. Pan,
and B. Bronk.
*Fluorescence of Microparticles: Dependence on Size,
Concentration of Fluorophors, and Intensity.*
Scientific Conference on Obscuration and Aerosol
Research, Aberdeen Proving Ground, MD
(16–18 June 1998).

Hill, S. C., G. Videen, and J. D. Pendleton.
*Reciprocity Method for Obtaining the Far Fields
Generated by a Source Inside or Near a Microparticle.*
Journal Optical Society of America B, **14**
(October 1997), pp 2522–2529.

Hillis, D.
*Using a Genetic Algorithm for Multi-Hypothesis
Tracking.*
Proceedings of the IEEE 9th International Conference
on Tools With Artificial Intelligence, Newport Beach,
CA (4–7 November 1997).

Hisley, Dixie, Gagan Agrawal, and Lori Pollock.
Evaluating the Effectiveness of a Parallelizing Compiler.
Lecture Notes in Computer Science, **1511** (May 1998),
pp 195–204.

Hobbs, Reginald L.
Hypermedia Scenarios for Command & Control.
21st Army Science Conference Summary Digest
(June 1998), pp 147–148.

Holland, V. M.
*Translating Linguistic Research into Teaching: Applica-
tions of Natural Language Processing.*
*Computer Assisted Language Instruction Consortium
Monographs Series 4 (June).*
Duke University: CALICO Press (1997), pp 52–65.

Holland, V. M., and C. Schlesiger.
*FALCON: A Machine Translation Support Tool to Link
Information Collectors with Analysts.*
Symposium on Advanced Information Processing and
Analysis (17–18 March 1998), p 45.

Holland, V. M., and C. Schlesiger.
*High-Mobility Machine Translations for a Battlefield
Environment.*
NATO Mission Systems Panel 9th Symposium on the
Application of Information Technologies to Mission
Systems, Monterey, CA (April 1998).

Journal Articles and Presentations

Holler, S., Y. Pan, R. Chang, J. Bottiger, S. Hill, and D. Hillis.
Two-Dimensional Angular Light Scattering for the Characterization of Airborne Microparticles.
Optics Letters, **23**, 18 (September 1998), pp 1489.

Hong, S. U., T. A. Barbari, and J. M. Sloan.
Multicomponent Diffusion of Methyl Ethyl Ketone and Toluene in Polyisobutylene from Vapor Sorption FTIR-ATR Spectroscopy.
Journal of Polymer Science, Part B: Polymer Physics, **36**, 2 (15 March 1998), pp 337–344.

Hoock, D., M. Bleiweiss, and R. Dumais.
An Approach to Using Meteorological Satellite Analysis to Support Battlescale Forecast and Decision Aid Applications.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Hoock, Donald W., Richard Shirkey, and J. Geiver.
Evaluating the Tactical IMETS as both an HLA Weather Client and a Server.
Proceedings of the International Test and Evaluation Association (ITEA) Workshop on Modeling and Simulation, Las Cruces, NM (11 December 1997).

Hu, Q., M. Melloch, B. Riely, and B. Williams.
Infrared (8-12 μm) Quantum Cascade Lasers.
Proceedings of the FedLab Symposium (28 February 1998), pp 54–57.

Huang, X., J. R. Gillespie, Jr, V. Kumar, and L. Gavin.
Mechanics of Integral Armor: Discontinuous-Ceramic-Cored Sandwich Structures Under Tension and Shear.
Composite Structures, **36**, 1-2 (1 November 1997), pp 81–90.

Hull, and Vinci.
Passive Detection and Non-Cooperative Target Identification of Helicopters Using ELF Electric Field Sensors.
Proceedings of the 21st Army Science Conference (16 June 1998), pp 19–20.

Immordino, K. M., S. H. McKnight, and J. W. Gillespie.
In Situ Evaluation of the Diffusion of Epoxy and Amine in Thermoplastic Polymers.
Journal of Adhesion, **65**, 1-4 (1 January1998), pp 115–129.

Ingham, Helfman, Hanratty, Dumer, and Baur.
TED Turbine Engine Diagnostics: A Practical Application of a Diagnostic Expert System.
Proceedings of the 9th IEEE Conference on Tools With Artificial Intelligence (November 1997) pp 438–444.

Jasper, Lou, and George Lucey.
Vortex Ring Generator.
Nonlethal Defense III Conference, (www.dtic.mil/stinet/ndia/nld3.html) (23 March 1998).

Jones, K. A., K. Xie, D. W. Eckart, M. C. Wood, V. Talyansky, R. D. Vispute, T. Venkatesan, K. Wongchotigul, and M. Spencer.
Aln as an Encapsulent for Annealing SiC.
Journal of Applied Physics, **83**, 12 (15 June 1998), pp 8010–8015.

Jow, T. R.
Overview of Capacitor Technology.
Soldier Portable Hybrid Electrical Power Systems (30 April 1998).

Jow, T. R., S. P. Ding, W. Behl, K. Xu, J.P. Zheng, and M. Salomon.
Advanced Nonaqueous Electrolytes for High-Energy and High-Power Electrochemical Capacitors.
1997 Automotive Technology Development Customer's Coordination, **3** (1 December 1997), pp 179–182.

Jow, T. R., and J. P. Zheng.
Electrochemical Capacitors Using Hydrous Ruthenium Oxide and Hydrogen Inserted Ruthenium Oxide.
Journal of Electrochemical Society, **145** (1 January 1998), pp 49–52.

Jow, T. R., J. P. Zheng, and S. P. Ding.
Analysis of Electrochemical Capacitors Using AC Impedance Spectra.
7th International Seminar on Double Layer Capacitors and Similar Energy Storage Devices, **7** (1 January 1998), pp 1–6.

Jow, T. R., J. P. Zheng, and S. P. Ding.
Pulse Performance of a Li-ion Battery Assisted by Electrochemical Capacitor Based on Amorphous Ruthenium Oxides.
7th International Seminar on Double Layer Capacitors and Similar Energy Storage Devices, **7** (1 January 1998), pp 1–14.

Jow, T. R., J. P. Zheng, X. Zhang, Y. Dai, and S. G. Greenbaum.
Electrochemical Characteristics and NMR Studies of Amorphous Hydrous Ruthenium Oxide.
Ionic and Mixed Conducting Ceramics **III**, 97 (1 December 1997), p 24.

Kappra, V. Marinelli, and Deluca.
Unexploded Ordnance Detection Experiments Using Ultra-Wideband Synthetic Radar.
SPIE AERO N 98, **3392** (6 May 1998), pp 668–677.

Kaul, R.
MMIC Compatible Receiver Protector (Multifunction MMIC).
Bimonthly Electromagnetic Environmental Effects (E[3]) Interchange Meeting, 15 July 1997 (8 June 1998), pp 37–48.

Journal Articles and Presentations

Kaul, R., J. McAdoo, W. M. Bollen, and W. Catoe.
MMIC-Compatible Terminal Protection Device.
1998 International Microwave Symposium Digest, **3**
(7 June 1998), pp 1167–1171.

Kennerly, S., D. Beekman, J. Little, and A. Goldberg.
Comparison of MBT and BTQB Quantum-Well Infrared Photodetector Designs.
1997 Meeting of the IRIS Specialty Group on Infrared Detectors (1 February 1998), pp 65–74.

Khatri, Costanza, et al.
Application of Multi-Layer Neural Network of Adaptive Detection.
6th Automatic Target Recognizer System and Technology Symposium, **1** (1 April 1998), pp 1–10.

Kim, J., S. Park, P. Dowd, and Nasser Nasrabadi.
Cellular Radio Channel Assignment Using a Modified Hopfield Network.
IEEE Transactions on Vehicular Technology **46**, 4 (1 November 1997), pp 957–967.

Kimsey, K. D., S. J. Schraml, and W. S. Hertel.
Scalable Computations in Penetration Mechanics.
Advances in Engineering Software, **29**, 3-6
(1 September 1998), pp 209–215.

Klager, Mills, David, and Bonner.
RSTA for Demo III XUV2s.
Proceedings of SPIE, Robotic and Semi-Robotic Ground Vehicle Technology, **3366** (April 1998).

Klipple, Gurney.
Prepositions and Variation.
Projections and Interfaces Conditions.
A.-M. Di Sciullo, ed., Oxford University Press (1997).

Klipple, Gurney.
Verb Modification and the Lexicon in the Natural Language and Virtual Reality System.
Proceedings of the Workshop on Lexical Semantic Systems, Pisa, Italy (April 1998).

Knapik, Joseph J.
Defining the NMD C2 Operator Roles, Responsibilities, and Information Environment.
66th Military Operations Research Society Symposium (MORSS) (23 June 1998).

Knapik, Joseph J.
Standard and Alternate Methods of Stretcher Carriage: Performance, Human Factors, and Cardiorespiratory Responses.
Medicine and Science in Sports and Exercise, **30**
(6 June 1998), p S316

Knapp, Beverly G.
Development of an Analytical Tool for Assessing Military Intelligence Production: The Intelligence Production Model (IPM).
66th Military Operations Research Society Symposium (MORSS) (24 June 1998).

Knapp, David I., and Patrick Haines.
A Mesoscale Model Hosted on a Personal Computer: Applications and Verification.
National Weather Association 22nd Annual Meeting, Reno, NV (18–24 October 1997).

Knapp, David I., and Patrick Haines.
Improving Field Artillery Meteorological Data for the U.S. Army Using a PC-Based Mesoscale Model.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Knapp, David I., and Jeffrey E. Passner.
Development of a Local 12–Hour General Thunderstorm Forecasting Technique for Use With RAOB or Mesoscale Model Vertical Profile Data.
Proceedings of the 16th Annual Conference on Weather and Forecasting, Phoenix, AZ (January 1998).

Kolodny, and V. Marinelli.
UXO Clearance Technology Requirements at Active Test and Training Ranges.
MINWARA, **1** (8 April 1998), p 57.

Kozick, R. Blum, and B. M. Sadler.
Signal Processing in Non-Gaussian Noise Using Mixture Distributions and the EM Algorithm.
31st Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA (November 1997).

Kozick, B. M. Sadler, and R. S. Blum.
Array Processing In Impulsive Noise: A Nonlinear Beamformer Based on the EM Algorithm.
Proceedings of the 1998 Conference on Information Sciences and Systems, Princeton University, Boston, MA (March 1998).

Kozycki, Richard.
Developing a Modeling and Simulation Paradigm for Assessing the Encumbrance of Helicopter Aircrew Clothing and Equipment.
SAFE Association 1998 Annual Symposium, **36**
(15 September 1998).

Krausman, Andrea.
Physiological and Cognitive Performance of Soldiers While Carrying Loads Over Various Terrains.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Journal Articles and Presentations

Krieger, Frank.
Miniaturized Thermal Reserve Battery.
Proceedings of the 38th Power Sources Conference
(1 June 1998), pp 231–234.

Kutzenov, Mendez, Bruno, and Pham.
*Enhancement of Shot Noise in Resonant Tunneling
Structures in a Magnetic Field.*
Bulletin APS, **43**, 1 (18 March 1998), pp 554–558.

Kwon, Hee-Sung, Mahesh Venkatraman, and
Nasser M. Nasrabadi.
*Quadtree-Based Vector Quantization for Very-Low Bit
Rate Video Coding.*
2nd Annual FedLab Symposium, **I** (2 February 1998),
pp 287–291.

Kwon, Hee-Sung, Mahesh Venkatraman, and
Nasser M. Nasrabadi.
*Very Low Bit Rate Video Code Using Variable Blocksize
Entropy-Constrained Residual Vector Quantizers.*
IEEE Transactions on Selected Areas in Communications, **15**, 9 (1 December 1997), pp 1714–1725.

Ladas, Andrew P.
GPS Counter Measures.
Armament for the Army of the Future, **1** (24 June 1998).

Lahart, Martin.
*Analysis of Cylindrical Dielectric Waveguide With Three
Regions Using an Invariant Mode Parameter.*
Journal of the Optical Society of America-A, **15**, 3
(1 February 1998), pp 727–735.

Lawler, W., G. Simonis, J. Pham, M. Datta, B. Koley,
and M. Dagenais.
*CMOS Drive Circuit for Hybrid Optoelectronic
Interconnects.*
Proceedings of Second International Workshop on
Design of Mixed-Mode Integrated Circuits and Applications (29 July 1998), pp 29–32.

Lee, C., S. P. Gido, Y. Poulos, N. Hadjichristidis,
N. C. Beck Tan, and S. F. Trevino.
Pi-Shaped Double-Graft Copolymers: Effect of Molecular Architecture on Morphology.
Polymer, **39**, 19 (27 July 1998), pp 4631–4638.

Lee, C., S. P. Gido, Y. Poulos, N. Hadjichristidis,
N. C. Beck Tan, S. F. Trevino, and J. W. Mays.
H-shaped Double Graft Copolymers: Effect of Molecular Architecture on Morphology.
Journal of Chemical Physics, **107**, 16 (22 October 1997),
pp 6460–6469.

Lermer, N., M. D. Barnes, C-Y. Kung, W. B. Whitten,
J. M. Ramsey, and S. C. Hill.
*Spatial Photoselection of Single Molecules on the
Surface of a Spherical Microcavity.*
Optical Letters, **23** (June 1998), pp 951–953.

Letowski, Tomasz R.
Accuracy of Pointing a Binaural Listening Array.
Human Factors Journal, **39**, 4 (20 December 1997),
pp 651–658.

Letowski, Tomasz R.
*Angular Resolution and Localization with Binaural
Microphone Array.*
1998 National Conference on Noise Control Engineering (5 April 1998), pp 525–530.

Letowski, Tomasz R.
*Contemporary Approaches to Audiological Assessment
in Young Children.*
Topics in Language Disorders Journal, **18**, 3
(3 April 1998), pp 52–71.

Letowski, Tomasz R.
*Effect of Age and Test Task on Auditory Processing of
Time-Compressed Speech.*
Journal Speech and Hearing Research, **40**, 5
(1 October 1997), pp 1192–1200.

Letowski, Tomasz R.
*The Effect on the XM-45 Gas Mask and Hood on
Directional Hearing.*
41st Annual Meeting of the HFES, **2** (2 October 1997),
pp 864–867.

Letowski, Tomasz R.
*Engine Noise and the Sound Quality of Automobile
Starter Sounds.*
Sound Quality Symposium (9 April 1998), pp 141–146.

Letowski, Tomasz R.
*Perception of Auditory Stimuli in Occupational Safety
and Ergonomics.*
Central Institute for Labor Protection, **1** (20 October
1997), pp 69–95.

Letowski, Tomasz R.
*Tri-Service Cooperation in Advanced Auditory Display
Research.*
DoD HFE TAG Meeting (13 May 1998), pp 2–3.

Li, Y., M. Brown, I. Eliashevich, T. DiCarlo, C. Trana,
R. Stall, L. Koszi, Y. Lu, and H. Shen.
*Fabrication and Characterization of GaN-Based Blue
Lighting-Emitting Diodes.*
Photonic West SPIE Opt '98, **3279** (30 January 1998),
pp 2–6.

Mait, Prather, and Mirotznik.
Binary Subwavelength Diffractive Lens Design.
Optical Letters, **23** (1 January 1998), pp 1342–1345.

Mait, Prather, and Mirotznik.
*Scalar-Based Design of Binary Subwavelength
Diffractive Lenses.*
1998 OSA Technical Digest Series Diffractive Optics
and Micro-Optics, **10** (15 June 1998), pp 88–90.

Journal Articles and Presentations

Manory, R. R., C. L. Li, C. Fountzoulas, J. D. Demaree, J. K. Hirvonen, and R. Nowak.
Effect of Nitrogen Ion-Implantation on the Tribological Properties and Hardness of TiN Films.
Materials Science and Engineering, **A253**, 1-2 (1 June 1998), pp 319.

Marinelli, A. M.
The Dynamic Range Tester: A Multi-Purpose Dual Channel Instrument for Generating Two Highly Isolated RF Signals.
IMTC 97 Special Issue of the IEEE Transactions for Instrumentation and Measurements, **47**, 1 (1 July 1998), pp 334–338.

Marinelli, A. M.
The Dynamic Range Tester: A Real World Signal Simulator for Systems Testing.
World Multiconference on Systemics, Cybernetics and Informatics, **IV** (1 July 1998), pp 83–88.

Mark, Andrew, R. Kanapady, Ram V. Mohan, and K. K. Tamma.
Computational Strategies and Approaches for Integrated Modeling Technology on High Performance Computing Platforms—Process Modeling Simulations.
Proceedings of 21st Army Science Conference (June 1998).

Mark, Andrew, Ram V. Mohan, and K. K. Tamma.
Integrated Modeling Technology for Process Simulation and Modeling of Large Composite Structures.
DoD Mission Success Stories in High Performance Computing (1998).

Marvel, L. M., and G. W. Hartwig, Jr.
The Performance of Image Compression Algorithms in Noisy Environments.
Proceedings, MILCOM 97 (November 1997).

Marvel, L. M., C. G. Boncelet, and C. T. Retter.
Reliable Blind Information Hiding for Images.
2nd International Workshop on Information Hiding, Portland, OR (April 1998).

Marvel, L. M., C. G. Boncelet, Jr., and C. T. Retter.
Spread Spectrum Image Steganography.
Proceedings of the 2nd Annual FedLab Symposium Advanced Telecommunications and Information Distribution Cosortium, College Park, MD (February 1998), pp 206–210.

Mayk, I. Salton, J. Dawidowicz, E. Wong, R. Tran, S. Chamberlain, and F. Brundick.
Distributed Situation Awareness for C2 Platforms.
Proceedings of the IEEE Man and Cybernetics Society International Conference (October 1997).

McKnight, S. H., and J. Gillespie.
In Situ Examination of Water Diffusion to the Polymer-Silane Interface using FTIR-ATR.
Journal of Applied Polymer Science, **64**, 10 (1 November 1997), pp 1971–??.

McMahon, Richard W.
Assessing Chemical Detector Effectiveness Using Distributed Simulation.
Military Operations Research Society (11 June 1998).

Mercado, A., R. W. Hiley, K. L. McNesby, and A. Miziolek.
Forensic Examination of Explosive Materials and Aviation Security.
Optics and Photonics News, **9**, 4 (1 April 1998).

Merchant, Barbara, Ravinder Kapoor, and Lawrence Carin.
Comparison of Model-Based Results With Measured Data for Metal Buried Mines.
AERON 1998 Proceedings, **3392** (1 April 1998), pp 658–667.

Mirotznik, Mait, Prather, and Beck.
Three-Dimensional Vector-Based Analysis of Subwavelength Diffractive Optical Elements using the Finite-Difference-Time-Domain (FDTD) Method.
1998 OSA Technical Digest Series Diffractive Optics and Micro-Optics, **10** (15 June 1998), pp 91–93.

Mohan, Ram V., Dale R. Shires, Andrew Mark, and K. K. Tamma.
Advanced Manufacturing of Large Scale Composite Modeling, Manufacturing Simulations, and Massively Parallel Computing Platforms.
Advances in Engineering, **29**, 3-6 (1998), pp 249–264.

Mohan, Ram V., Dale R. Shires, Andrew Mark, K. K. Tamma, and N. D. Ngo.
Manufacturing Process Flow Modeling of Large Scale Complex Composite Army Structures.
Proceedings of 21st Army Science Conference (June 1998).

Morris, J. B.
Solubility of RDX in Dense Carbon Dioxide at Termperatures between 303 K and 353 K.
Journal of Chemical and Engineering Data, **43**, 2 (1 July 1998), pp 269–273.

Musah, R. A., G. M. Jensen, R. J. Rosenfeld, D. E. McRee, D. B. Goodin, and S. W. Bunte.
Variation in Strength of an Unconventional C-H to O Hydrogen Bond in and Engineered Protein Cavity.
Journal of the American Chemical Society, **119**, 38 (1 December 1997), pp 9083–9084.

Journal Articles and Presentations

Nagvajara, P., T. R. Damarla, J. Wang, and S. Chansilp.
A Phase Coherent Numerically Controlled Oscillator Based on Pipeline Architecture.
Proceedings of IEEE ASIC Conference, (1 September 1998), pp 355–358.

Ngo, N. D., Ram V. Mohan, Dale R. Shires, and K. K. Tamma.
Finite Element Techniques for the Analysis of Transport Phenomena During Composites Manufacturing.
Proceedings of 21st Army Science Conference (June 1998).

Nguyen, S.
Future Network Simulation and Modeling in the U.S. Army.
International Association of Science and Technology for Development (IASTED) **1** (May 1998), pp 494–498.

Nguyen, Lam, Karl Kappra, David Wong, Ravinder Kapoor, and Jeffrey Sichina.
A Mine Field Detection Algorithm Utilizing Data From an Ultra-Wideband Wide-Area Surveillance Radar.
SPIE Proceedings 1998, **3392** (1 April 1998), pp 627–643.

Nguyen, Lam, Ravinder Kapoor, Jeffrey Sichina, and David Wong.
Ultra-Wideband Radar Target Discrimination Utilizing an Advanced Feature Set.
SPIE Proceedings 1998, **3370** (1 April 1998), pp 289–306.

Nguyen, Lam, Jeffrey Sichina, Karl Kappra, David Wong and Ravinder Kapoor.
Emerging Mine Field Detection Results From an Ultra-Wideband Radar.
3rd International Symposium on Technology and the Mine Problem (1 September 1998), pp 1–13.

Nietubicz, Charles J.
A New Model for High Performance Computing Centers.
HPC Asia Conference, South Korea.

Norris, D. E., D. K. Wilson, and D. W. Thomson.
The Effects of Turbulent Intermittency on Scattering for Varying Degrees of Saturation.
Presented at the Joint 16th International Congress on Acoustics/135th Meeting of the Acoustical Society of America, Seattle, WA (22 June 1998).

Nusca, M. J.
Numerical Simulation of Electromagnetic Wave Attenuation in Nonequilibrium Chemically Reacting Flows.
Computers and Fluids, **27**, 2 (1 February 1998), pp 217–238.

Oskam, G. S., P. C. Searson, and T. R. Jow.
Sol-Gel Synthesis and Characterization of Carbon/Ceramic Composition Electrodes.
Proceedings of the 38th Power Sources Conference (1 June 1998), pp 13–16.

Pan, Towe, and Kennerly.
Strong Normal Incidence Infrared Absorption and Photo-Current Spectra From Highly Uniform (In,Ga)As/GaAs Quantum Dot Structures.
Electronics Letters, **34**, 10 (14 May 1998), pp 1019–1021.

Passner, Jeffrey E.
Cloud Analysis and Forecasting for IMETS.
Proceedings of the 16th Conference on Weather and Forecasting, Phoenix, AZ (January 1998).

Passner, Jeffrey E.
The SCIAD Program in New Mexico.
Proceedings of the Seventh Symposium on Education, Phoenix, AZ (January 1998).

Passner, Jeffrey E.
The Use of Empirical Rules on IMETS.
Proceedings of the First Conference on Artificial Intelligence, Phoenix, AZ (January 1998).

Patterson, P. H., and W. Lum.
FT-IR Characterization of Chemical Agent Resistant Coatings Durability Using Disposable IR Cards.
Spectroscopy, **12**, 9 (15 November 1997), p 48.

Pednekar, S. P.
Failure of Tungsten Carbide-Cobalt Lamination Dies: A Corrosion Evaluation.
Corrosion, **53**, 10 (1 October 1997), pp 813–819.

Pelligrino, P., N. F. Fell, Jr., D. L. Rosen, and J. B. Gillespie.
Bacterial Endospore Detection Using Terbium Dipicolinate Photoluminescence in the Presence of Chemical and Biological Materials.
Analytical Chemistry, **70** (September 1998), pp 1755–1760.

Pellegrino, P., G. Videen, and R. G. Pinnick.
Quantitative Light Scattering Angular Correlation of Conglomerate Particles.
Applied Optics, **36** (October 1997), pp 7672–7677.

Pendleton, J. D., and S. C. Hill.
Collection of Emission From an Oscillating Dipole Inside a Sphere: Analytical Integration Over a Circular Aperture.
Applied Optics, **20** (November 1997), pp 8729–8737.

Journal Articles and Presentations

Pepi, M. S.
Failure Analysis of a Self-Retaining Bolt from an Army Cargo Helicopter.
American Fastener Journal, **15**, 5 (1 September 1998), p 50.

Pepi, M. S., V. Champagne, S. Grendahl, K. Bhansali, and G. Liu.
Effect of Intergranular Surface Attack on the Fatigue and Corrosion Properties of AM-355 CRT Material ASTM 1337.
Effects of Product Quality and Design Criteria on Structural Integrity (1 July 1998).

Perzanowski, and K. Gurney.
The Functionality of It-Clefts in Selected Discourses.
Word (1997).

Phillips, Jonathon.
The Design of Matching Pursuit Filters.
Network: Computation in Neural Systems, **9**, 1 (1 December 1997), pp 1–17.

Phillips, Jonathon.
An Efficient Micrograph Registration Algorithm via Sieve Processes.
Journal of Computer Assisted Microscopy, **8**, 1 (2 January 1998), pp 234–238.

Phillips, Jonathon.
Matching Pursuit Filters Applied to Face Identification.
IEEE Transactions in Image Processing, **7**, 8 (1 August 1998), pp 1150–1164.

Phillips, Jonathon, Harry Wechsler, Jeffrey Huang, and Patrick Rauss.
The FERET Database and Evaluation Procedure for Face Recognition Algorithms.
Image and Vision Computing, **16**, 5 (1 February 1998), pp 295–306.

Pierce, Linda G.
Development of a Performance Assessment Package for DIVARTY Staff Training.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Pierce, Linda G.
Defining Requirements for Cost Efficient Collective Training for Dispersed Staffs.
1998 Command and Control Research and Technology Symposium (1 July 1998), pp 334–346.

Pierce, Linda G.
Hearing Protectors and Hazard From Impulse Noise: Melding Method and Models.
16th International Congress on Acoustics and 135 Meeting of the Acoustical Society of America (23 June 1998), pp 1145–1146.

Pierce, Linda G.
A Methodology for Assessing Knowledge Organization in Teams: Implications for Training Design.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Pierce, Linda G.
Simulation and Automation in Advanced Fire Support Training: Classroom XXI Technology and Instructional Methodology.
1998 Command and Control Research and Technology Symposium (1 July 1998), pp 347–359.

Pierce, Leland, Greg Samples, Craig Dobson, and Fawwaz Ulaby.
Automated Unsupervised/Supervised Classification Methodology.
International Geoscience And Remote Sensing Symposium, **4** (1 August 1998), pp 1781–1783.

Pinnick, R. G., S. C. Hill, G. Chen, S. Holler, and R. K. Chang.
Biological Aerosol Detection By Fluorescence Spectra.
16th Annual Conference of the American Association of Aerosol Research, Denver, CO (13–17 October 1997).

Pinnick, R. G., S. C. Hill, P. Nachman, G. Videen, G. Chen, and R. K. Chang.
Aerosol Fluorescence Spectrum Analyzer for Rapid Measurement of Single Micron-Sized Airborne Biological Particles.
Aerosol Science & Technology, **28** (February 1998), pp 95–104.

Pinnick, R. G., S. C. Hill, S. Niles, P. Nachman, G. Videen, S. Holler, G. Chen, R. Chang, N. Fell, J. Bottiger, and R. Bronk.
Aerosol Fluorescence Spectrum Analyzer for Rapid Measurement of Single Micrometer-Sized Biological Particles.
21st Army Science Conference, Norfolk, VA (15–17 June 1998).

Plett, G. L., T. Doi, and D. Torrieri.
Mine Detection Using Scattering Parameters and an Artificial Neural Network.
IEEE Transactions Neural Networks (November 1997), pp 1456–1467.

Plichta, Edward, and Wishvender Behl.
Low Temperature Electrolyte for Lithium and Lithium—Ion Batteries.
Proceedings of the 38th Power Sources Conference (1 June 1998), pp 444–447.

Podlesak, T. F., F. Simon, S. Schneider, and I. Grekhov.
Experimental Investigation of Dynistors and Dynistor Based Pulsers.
Twenty-Third International Power Modulator Symposium, **23** (22 June 1998), pp 182–185.

Journal Articles and Presentations

Prather, Mait, and Mirotznik.
Vector-Based Synthesis of Finite, Aperiodic Subwavelength Diffractive Optical Elements.
Journal of Optical Society of America, **A 15** (30 June 1998), pp 1599–1607.

Prather, Shi, Mirotznik, and Mait.
Vector-Based Analysis of Axially Symmetric and Conducting Diffractive Lenses.
1998 OSA Technical Digest Series Diffractive Optics and Micro Optics, **10** (15 June 1998), pp 94–96.

Pressel, Daniel M.
An Analysis of the Strengths and Weaknesses of RISC-Based Shared Memory Symmetric Multiprocessors as They Apply to Scientific High-Performance Computing.
Proceedings of the 1998 DOD HPC User's Group Meeting.

Pressel, Daniel M.
Experiences Using Loop-Level Parallelism to Port an Implicit CFD Code to the 128 Processor Origin 2000.
Cray User's Group Origin 2000 Workshop, Denver, CO.

Pressel, Daniel M.
Methods for Achieving High Levels of Performance on SGI Origin 2000's and Other RISC-Based Cache Coherent Shared Memory Symmetric Multiprocessors.
NCAR (National Center for Atmospheric Research) Boulder, CO.

Price, G. Richard.
Standards for Damage Risk for Impact/Impulse Noise.
23rd National Hearing Conservation Association Meeting (15 February 1998), pp 1–10.

Promisel, David.
JEMP III: Future Management of Joint Training.
66th Military Operations Research Society Symposium (MORSS) (23 June 1998).

Reinecke, T. L., and S. Rudin.
Size Dependent Rabi Splitting in Etched Semiconductor Microcavities.
Bulletin APS, **43** (31 March 1998), pp 766–769.

Rensheng Dou, M. A. Vorontsov, V. P. Sivokin, and M. K. Giles.
Iterative Technique for High-resolution Phase Distortion Compensation in Adaptive Interferometers.
Optical Engineering, **37** (12) (1997), pp 3327–3335.

Rice, B. M., and C. F. Chabalowski.
Ab Initio and Nonlocal Density Functional Study of 1,3,5-Trinitro-s-triazine (RDX) Conformers.
Journal of Physical Chemistry, **A101**, 46 (1 November 1997), pp 8720–8726.

Rice, B. M., W. Mattson, and S. F. Trevino.
Molecular-Dynamics Investigation of the Desensitization of Detonable Material.
Physical Review E, **57**, 5 (1 May 1998), pp 5106–5111.

Rizvi, Syed, Lin-Cheng Wang, and Nasser Nasrabadi.
Rate-Constrained Modular Predictive Residual Vector Quantization.
IEEE International Conference on Image Processing, ICIP '97, **1**, CD (26 October 1997).

Rizvi, Syed, Lin-Cheng Wang, and Nasser Nasrabadi.
Nonlinear Vector Prediction Using Feed-Forward Neural Networks.
IEEE Transactions on Image Processing, **6**, 10 (1 October 1997), pp 1431–1436.

Rohaly, Ann M.
Dividing Attention Between Fovea and Periphery: Implications for Helmet-Mounted Display Design.
Human Vision and Electric Imaging II Conference (28 January 1998), pp 351–359.

Figure 3. LCERT experimental setup.

Source: Canh Ly and Herbert Dropkin, *Suppersolution for Low-Cost Enabling Radar Technology*, ARL-TR-1780.
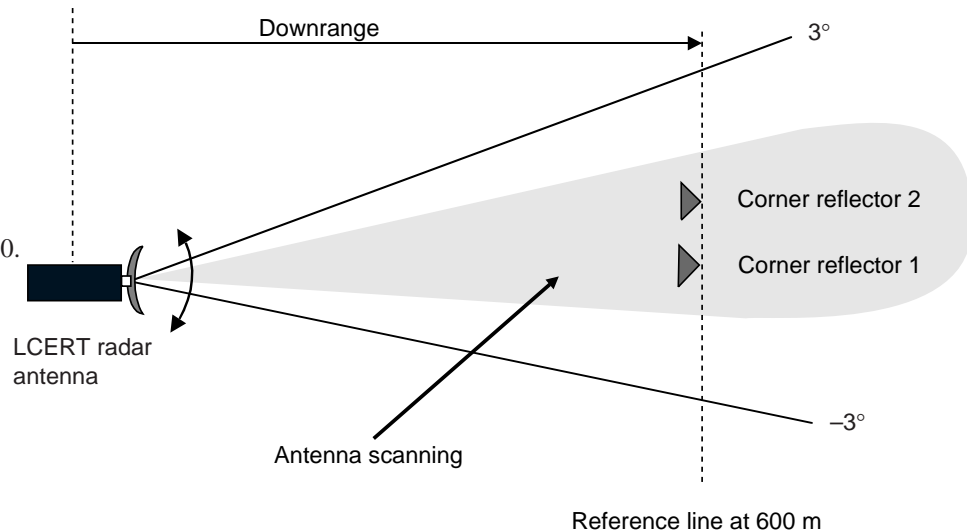
Journal Articles and Presentations

Rohaly, Ann M.
Object Detection in Natural Backgrounds Predicted by Discrimination Performance and Models.
Vision Research, Special Issue on Vision of Natural and Complex Images, 37 (1 November 1997),
pp 3225–3235.

Rohkinson, Tsui, Vawter, and Choi.
Small Size Quantum-Well Infrared Photodetectors.
Bulletin APS, **43** (31 March 1998), pp 173–174.

Rosario.
Estimating Squinted SAR Data: Efficient Multivariate Minimization Approach Using Only the Essential 3-D Target Info.
Proceedings of the IEEE International Conference on Image Processing (1 October 1997), pp 718–721.

Rosen, D. L.
Wavelength Pair Selection for Bacterial Endospore Detection by Use of Terbium Dipicolinate Photoluminescence.
Applied Optics, **37**, No 4 (February 1998), pp 805–807.

Rosen, D. L., J. Gillespie, and P. Pellegrino.
Bacterial Endospore Detection by Forming a Terbium Complex With a Distinctive Photoluminescence Spectrum.
Scientific Conference on Obscuration and Aerosol Research, Aberdeen Proving Ground, MD
(16–18 June 1998).

Rosen, D. L., and S. Lambrakos.
Electroreflectivity Measurements Inverted With Windowed Response Functions.
Society of Industrial and Applied Mathematics, Session, Inversion Problems for Wave Propagation, Golden, CO
(4 June 1998).

Rosen, D. L., and S. Lambrakos.
Modulated Reflectance Analysis Of Complex Surface Structures.
Applied Spectroscopy, **52** (1998), pp 1053–1061.

Rudin, S., and G. Samsonidze.
Non-Linear Plasma Waves in the Field Effect Transistor Structures.
ISDRS-97 (1 December 1997), pp 583–586.

Rudin, S., and G. Samsondize.
Non-Linear Plasma Waves in FET Structures.
Bulletin APS, **43** (31 March 1998), pp 306–309.

Sadler, B., and A. V. Dandawate.
Nonparametric Estimation Of The Cyclic Cross-Spectrum.
IEEE Transactions on Information Theory, **44**, 1
(January 1998), pp 351–358.

Sadler, B. M., Tien Pham, and Laurel C. Sadler.
Optimal and Wavelet-Based Shock Wave Detection and Estimation.
Journal Optical Society of America, **104** (2)
(August 1998), pp 955–963.

Sadler, B., and A. Swami.
On Multiscale Wavelet Analysis for Step Estimation.
Proceedings of the International Conference on Acoustics, Speech, and Signal Processing (ICASSP'98), III
(May 1998), pp 1517–20.

Saffarian, H., R. Srinivasan, S. Gilman, and D. Chu.
Electrochemical Diffusion: A Fast and Efficient Technique to Determine True Surface Areas in Fractal Surfaces of Powder Catalysts.
Proceedings of the 38th Power Sources Conference
(1 June 1998), pp 481–484.

Sahu, J. R., K. R. Heavey, and E. Ferry.
Computational Modeling of Multibody Aerodynamic Interference.
Advances in Engineering Software, **29**, 4 (1 April 1998).

Sahu, Jubaraj, Daniel M. Pressel, Karen R. Heavey, and Charles J. Nietubicz
Parallel Application of a Navier-Stokes Solver for Projectile Aerodynamics
Proceedings of the 1998 Army Science Conference.

Salvi, Lucia.
Development of Improved Performance Research Integration Tool (IMPRINT) Performance Degradation Factors for the Warrior Program.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Samsonidze, G., S. Rudin, and Shur.
Large Signal Theory of Plasma Electronics THz Detector.
IEEE Proceedings of 6th International Conference of TeraHertz Electronics (4 September 1998), pp 231–233.

Sauter, David P.
IWEDA for Brigade Task Force XXI: Assessment and Lessons Learned.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Sauter, David P., et al.
The Integrated Weather Effects Decision Aid: A Software Tool to Provide Common Environmental Effects to the Army Battle Command System in the 21st Century.
21st Army Science Conference, Norfolk, VA
(15–17 June 1998).

Journal Articles and Presentations

Savick, Douglas S.
Comparison of Various Types of Head-Related Transfer Functions for 3-D Sound in the Virtual Environment.
66th Military Operations Research Society Symposium (MORSS) (23 June 1998).

Scheinerman, Edward R., and Paul J. Tanenbaum.
Shrinkability of Minimal Elements in Sphere Representation of Posets.
Order, **14** (1997), pp 59–66.

Schipani, Salvatore P.
Quantification of Cognitive Process Degradation While Mobile, Attributable to the Environmental Stressors Endurance, Vibration, and Noise.
66th Military Operations Research Society Symposium (MORSS) (25 June 1998).

Schmidt, E. M., and W. F. Donovan.
Technique to Reduce Yaw and Jump of Fin-Stabilized Projectiles.
Journal of Spacecraft and Rockets, **35**, 1 (1 January 1998), pp 110–111.

Scribner, David R.
Tactical Unmanned System: Human Factors Findings.
66th Military Operations Research Society Symposium (MORSS) (23 June 1998), pp 96–97.

Segletes, S. B., and W. P. Walters.
On Theories of the Gruneisen Parameter.
Journal of Physics and Chemistry of Solids, **59**, 3 (1 March 1998), pp 425–433.

Shen, H., J. Pampulapati, X. Shao, R. Jonczysk, B. A. Orner, A. S. Kahn, R. Toe, and P. R. Berg.
Raman Study of Ge1-xCx Islands Grown on Si Substrates.
Materials Research Conference (1 December 1997), pp 203–206.

Shen, H., J. Pampulapati, W. Zhou, M. Dutta, and F. Johnson.
Bias Independent Heavy- and Light-Hole Degeneracy in InGaAs/InGaAsP Quantum Well.
Applied Physics Letters, **72** (1 February 1998), pp 653–657F.

Shen, H., J. Pampulapati, W. Zhou, M. Dutta, and F. G. Johnson.
Optical Properties of Quantum Wells with Embedded Delta Strained Layers.
Proceedings of 193rd ECS Meeting (3 May 1998), pp 51–55.

Shen, H., J. Pamulapati, W. Zhou, and F. G. Johnson.
Quantum Confined Stark Effect in Partially Strained Quantum Wells.
Technical Digest of CLEO '98, **6** (3 May 1998), pp 202–203.

Shen, H., J. Pamulapati, W. Zhou, and F. G. Johnson.
Control of Quantum Confined Stark Effect in Strained Quantum Wells.
Proceedings of 21st Army Science Conference (15 June 1998), pp 13–19.

Shirkey, Richard.
Comparison of IWEDA with EOTDA.
TARGAC and ORACLE, Weather Impacts Decision Aid Workshop, Langley AFB, VA (March 1998).

Shirkey, Richard
Quantitative vs. Qualitative Tactical Decision Aids: Is There a Difference?
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Shirkey, Richard.
Target Acquisition for IWEDA: Philosophy and Rationale.
IWEDA Conference, Fort Huachuca, AZ (April 1998).

Shirkey, Richard.
Weather Effects on Target Acquisition.
1998 Army After Next Tactical Decision Aid Technology Symposium, El Paso, TX (April 1998).

Shirkey, Richard, and Donald Hoock.
Battlefield Atmosphere Applications for the Master Environmental Library (MEL).
Proceedings of the 1997 International Test and Evaluation Association (ITEA) Workshop on Modeling and Simulation, Las Cruces, NM (12 December 1997).

Sichina Jeffrey, and Byer.
Radar Overview.
2nd Annual FedLab Symposium (1 February 1998), pp 99–102.

Sistla, P., O. Wolfson, S. Chamberlain, and S. Dao.
Querying the Uncertain Position of Moving Objects. Temporal Databases: Research and Practice.
Etzion, O., et al., eds., Springer-Verlag, LNCS State-of-the-Art Survey Series. LNCS 1399 (1998), p 429.

Sivokin, Victor, and M. A. Vorontsov.
High-Resolution Adaptive Phase Distortion Suppression Based Solely on Intensity Information.
Journal of the Optical Society of America A, **15**, 1 (1998), pp 234–247.

Smith, M. J., D. K. Wilson, M. Heyd, D. I. Havelock, H. J. Auvermann, and J. M. Noble.
Confirmation of the Effective Coefficient for Scattering by Turbulent Velocity Fluctuations.
Journal of the Acoustical Society of America, **102**, 5, Part 2 (December 1997), pp 3087.

Journal Articles and Presentations

Smyth, Christopher C.
Indirect Vision Driving with HMDs.
The 39th DoD Human Factors Engineering Technical Advisory Group Meeting (4 November 1997), p E2-3.

Sorescu, D. C., B. M. Rice, and D. L. Thompson.
Isothermal-Isobaric Molecular Dynamics Simulations of 1,3,5,7-Tetranitro-1,3,5,7-tetraazacyclooctane (HMX) Crystals.
Journal of Physical Chemistry, **B102**, (1 September 1998), pp 6692–6695.

Sorescu, D. C., B. M. Rice, and D. L. Thompson.
Molecular Packing and NPT-Molecular Dynamics Investigation of the Transferability of the RDX Intermolecular Potential to 2,4,6,8,10,12-Hexanitrohexaazaisowurtzitane.
Journal of Physical Chemistry, **B102**, 6 (5 February 1998), pp 948–952.

Staker, M. R.
The Uranium-Vanadium Equilibrium Phase Diagram.
Journal of Alloys and Compounds, **266**, 1-2 (31 March 1998), pp 167–179.

Stann, B., W. Ruff, D. Robinson, J. Bruno, M. S. Tobin, J. Pham, M. Giza, D. Simon, and Z. Sztankay.
A Demonstration Ladar for the MDSS.
Proceedings of the FedLab Symposium (28 February 1998), pp 44–48.

Stann, B., W. Ruff, D. Robinson, and Z. Sztankay.
FM/CW Diode Laser Ladar for Smart Munition Applications.
1997 Meeting of the IRIS Specialty Group on Active Systems (31 October 1997), pp 97–107.

Stann, B., W. Ruff, Z. Sztankay, and D. Robinson.
A Low-Cost Ladar Sensor for Submunitions.
Proceedings of the FedLab Symposium (28 February 1998), pp 11–15.

Sudkamp, Hammell II.
Granularity and Specificity in Fuzzy Function Approximation.
Proceedings of the Annual Conference of the North American Fuzzy Information Processing Society (20–21 August 1998), pp 105–109.

Sudkamp, Hammell II.
Scalability in Fuzzy Rule-Based Learning.
Information Systems Journal, **109** (1998), pp 135–147.

Sudkamp, Hammell II.
Soft Computing, Modeling, and Function Approximation.
Proceedings of the Annual Army Conference on Applied Statistics, Fairfax, VA (22–24 October 1997).

Swami, A., and M. Ghogho.
Cramer-Rao Bounds for Coupled Harmonics in Noise.
Proceedings Asilomar-97, Pacific Grove, CA (November 1997), pp 483–487.

Swami, A., and M. Ghogho.
Performance Analysis of Cyclic Estimators for Harmonics in Multiplicative and Additive Noise.
Proceedings ICASSP-98, **IV** (May 1998), pp 2309–12.

Swami, A., and B. M. Sadler.
Hierarchical Modulation Classification.
Proceedings of the 2nd Annual Conference of the Advanced Telecommunications/Information Distribution Research Program (February 1998) pp 158–162.

Swami, A., and B. M. Sadler.
Parameter Estimation for Linear Alpha-Table Processes.
IEEE Transactions on Signal Processing Letters, **5**(2) (February 1998), pp 48–50.

Swami, A., and P. Tichavsky.
Ergodicity Conditions for Moments and Cumulants of Noisy Harmonic Processes.
Signal Processing (Elsevier), **65**(2) (1998), pp 257–266.

Tan, N. C. Beck, W. L. Wu, W. E. Wallace, and G. T. Davis.
Interface Effects on Moisture Absorption in Ultrathin Polyimide Films.
Journal of Polymer Science. Part B, Polymer Physics, **36**, 1 (1 January1998), pp 155–162.

Thacker, G., A. Carobus, and S. Chamberlain.
Adaptation of the Electra ORB for Lower Echelon QoS Considerations.
Proceedings of the 2nd FedLab ATIRP Symposium, Adelphi, MD (February 1998).

Thomas, Mark, and Andrew Neiderer.
Transmitting Dynamic Terrain Changes in Real-time Distributed Simulation.
Simulation Interoperability Workshop (September 1998).

Tidrow, M. Z.
Observation of Large Quantum Confined Stark Effect in Three Coupled InGaAs/GaAs/AlGaAs QWIP.
Long Wavelength Infrared Detectors and Arrays: Physics and Applications V, (31 January 1998), pp 209–214.

Tidrow, M. Z.
Three-Well One- and Two-Color Quantum-Well Infrared Photodetectors.
Materials Chemistry and Physics, **50**, 3 (1 October 1997), pp 183–186.

Journal Articles and Presentations

Tidrow, M. Z., D. Beekman, S. Kennerly, X. Jiang, J. Chiang, S. Li, A. Singh, and M. Dodd.
Simplified QWIPs for Low Temperature and Low Background Applications.
Proceedings of SPIE Infrared Detectors and Focal Plane Arrays, **3379** (1 May 1998), pp 268–273.

Tidrow, M. Z., X. D. Jiang, J. C. Chiang, Sheng S. Li, and S. W. Kennerly.
Normal Incidence N-Type Direct Gap Quantum-Well Infrared Photodetector.
Long Wavelength Infrared Detectors and Arrays: Physics and Applications V, **97-33** (31 January 1998), pp 199–208.

Todd, C., A. Sethi, and S. Chamberlain.
Feedback of Network Performance to Provide Better Utilization of Communications Resources.
Proceedings of the 2nd FedLab ATIRP Symposium, Adelphi, MD (February 1998).

Tofsted, D., M. Bleiweiss, D. Hoock, J. Martin, R. Shirkey, and C. Willamson.
Battlefield Environment Products for the Master Environmental Library.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Tofsted, D., R. Shirkey, D. Hoock, M. Bleiweiss, J. Martin, and C. Williamson.
Battlefield Environment Data Sets for the Master Environmental Library.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Torrieri, D.
Future Army Mobile Multiple-Access Communications.
Proceedings of the MILCOM (November 1997), pp 650–654.

Torrieri, D., and K. Bakhru.
Neural-Network Superresolution.
Proceedings of the MILCOM (November 1997), pp 1594–1598.

Trevino, S. F., R. Joubran, N. Parris, and N. F. Berk.
Structure of a Triglyceride Microemulsion: A Small-Angle Neutron Scattering Study.
Journal of Physical Chemistry, **B102**, 6 (5 February 1998), pp 953–960.

Tunick, A.
A Refractive Index Structure Parameter Model.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Tyrol, Douglas E.
HRED Article for Gateway–Crew System Ergonomics Information Analysis Center (CSERIAC).
Gateway, **8**, 2 (30 December 1997), pp 9–12.

Tzeng, J. T.
Dynamic Response and Fracture of Composite Cylinders.
Journal of Composites Science and Technology, **58**, 9 (1 July 1998).

Tzeng, J. T., and A. Abrahamian.
An Experimental Method for Compressive Properties of Laminated Composites at High Rates of Loading.
Journal of Thermoplastic Composite Materials, **11**, 2 (1 March 1998), pp 133–143.

Ulaby, F., A. Nashashibi, A. El-Rouby, E. Li, R. DeRoo, K. Sarabandi, Ronald Wellman, and H. Bruce Wallace.
Millimeter-Wave Scattering by Terrain at Near Grazing Incidence.
IEEE-AP Transactions Special Issue on Low Grazing Angle Backscatter for Rough Surfaces, **46**, 1 (1 January 1998), pp 3–13.

Uppal, P., J. Little, A. Goldberg, R. Leavitt, M. Sundaram, and A. Reisinger.
MBE Growth and Characterization of Two Color Quantum-Well Infrared Photodetectors.
Proceedings of the FedLab Symposium (28 February 1998), pp 16–19.

VanLandingham, M. R., S. H. McKnight, G. Palmese, J. Elings, X. Huang, T. A. Bogetti, R. Eduljee, and J. Gillespie.
Nanoscale Indentation of Polymer Systems Using the Atomic Force Microscope.
Journal of Adhesion, **64**, 1-4 (1 November 1997), pp 31–59.

Venizelos, D. T., and R. C. Sausa.
Laser-Induced Fluorescence, Mass Spectrometric and Modeling Studies of Neat and NH3-Doped H2/N20/Ar Flames.
Combustion and Flame, **115**, 3 (1 March 1998), pp 313–326.

Videen, G.
Aerosol Fluorescence Spectrum Analyzer for Rapid Measurement of Single Micrometer-Sized Biological Particles.
Sixth CBW Protection Symposium, Stockholm, Sweden (10–15 May 1998).

Videen, G.
Light Scattering From Contaminated Surfaces.
Defense Research Agency, Malvern, United Kingdom (16 February 1998).

Videen, G.
Polarized Light Scattering From Irregular Surfaces.
Third Workshop on Electromagnetic and Light Scattering—Theory and Applications, Bremen, Germany (16–17 March 1998).

28

Journal Articles and Presentations

Videen, G.
Polarized Light Scattering From Surface Contaminants.
Optics Communications, **143** (November 1997),
pp 173–178.

Videen, G., and D. Ngo.
Light Scattering and Multipole Solution for a Cell.
Journal Biomedical Optics, **3** (April 1998), pp 212–220.

Videen, G., R. G. Pinnick, D. Ngo, Q. Fu, and P. Chylek.
Asymmetry Parameter and Aggregate Particles.
Applied Optics, **37** (February 1998), pp 1104–1109.

Vorontsov, M. A., and B. A. Samson.
Nonlinear Dynamics in an Optical System With Controlled 2D Feedback: Black Eye Patterns and Related Phenomena.
Physical Review A, **57**, 4 (1998).

Voss, C. R.
Design to Consider in the Evaluation of Embedded MT Systems, Association for Machine Translation in the Americas.
Workshop on Embedded MT: Design, Construction, and Evaluation of Systems with an MT Component, Langhorne, PA (October 1998).

Voss, C. R.
Evaluation of Embedded Machine Translation Systems.
Army Conference on Applied Statistics, Clinical Presentation, Las Cruces, NM (October 1998).

Voss, C. R., B. Dorr, and M. U. Sencan.
The Problem of Lexical Allocation in Interlingua-Based Machine Translation of Spatial Expressions.
The Representation and Processing of Spatial Expressions, Patrick Olivier and Klaus-Peter Gapp, eds. chapter 8, Lawrence Erlbaum Associates, Hillsdale, NJ (1997).

Wallace, W. E., N. C. Beck Tan, W. L. Wu, and S. Satija.
Mass Density of Polystyrene Thin Films Measured by Twin Neutron Reflectivity.
Journal of Chemical Physics, **108**, 9 (1 March 1998), pp 3798–3804.

Walrath, C. R. Voss, and K. Gurney.
Towards a Hands-Free Interface: Tracking Natural Eye Movements During Discourse.
ARL Federated Laboratory Symposium, Advanced Displays and Interactive Displays Symposium, College Park, MD (February 1998).

Wang, Der, Nasrabadi, and Rizvi.
Automatic Target Recognition Using Neural Networks.
SPIE, Algorithms, Devices, and Systems for Optical Info Processing, **3466** (1 July 1998), pp 20–23.

Wang, Lin-Cheng, Sandor Der, and Nasser M. Nasrabadi.
Automatic Target Recognition Using a Feature-Decomposition and Data-Decomposition Modular Neural Network.
IS&T/SPIE's 10th Annual Symposium Electronic Imaging: '98 Science & Technology, **3307**, 26-27 (1 January 1998), pp 2–13.

Wang, Lin Chen, Sandor Der, and Nasser Nasrabadi.
Automatic Target Recognition Using a Modular Neural Network.
IEEE Journal of Image Processing, **7**, 8 (1 August 1998), pp 1113–1121.

Wang, Lin-Cheng, Sandor Der, and Nasser Nasrabadi.
Composite Classifiers for Automatic Target Recognition.
Optical Engineering, **37**, 3 (1 March 1998), pp 858–868.

Weinacht, P. J., W. B. Sturek, and L. B. Schiff.
Navier-Stokes Predictions of Pitch Damping for Axisymmetric Projectiles.
Journal of Spacecraft and Rockets, **34**, 6 (1 November 1997), pp 753–761.

Wells, J. R. , J. S. Baxley, and J. A. Escarsega.
Coatings Emissions and Relative Ozone Formation.
Metal Finishing, **96**, 4 (1 April 1998), pp 33–37.

Wiebach, W., and E. Rausch.
Improving the Sidelobes of Arrays Fed by Multiple-Beam Beam Formers.
IEEE Radar Conference Proceedings 1998 (1 May 1998), pp 313–318.

Wetmore, Alan, Patti Gillespie, and David Ligon.
Weather Effects and Modeling for Simulation and Analysis.
Proceedings of the Sensors and Electronics Technology Panel on EO Propagation, Signature and System Performance Under Adverse Meteorological Conditions Considering Out of Area Operations Symposium, Italian Air Force Academy, Naples, Italy (March 1998).

Wetmore, Alan, Patti Gillespie, David Ligon, Sam Crow, Joel Mozer, and Guy Seeley.
Preliminary Analysis of the CSSM-BLIRB Surface Radiance Validation.
Proceedings of the 21st Annual Review Conference on Atmospheric Transmission Models, Hanscom AFB, MA (9–11 June 1998).

Wetmore, Alan, Patti Gillespie, David Ligon, Sam Crow, Michael Seablom, Joel Mozer, and George Seeley.
Experimental Validation of the Integrated CSSM-BLIRB Models.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (2–4 December 1997).

Journal Articles and Presentations

Wetmore, Alan, David Ligon, Patti Gillespie, Michael Seabloom, Guy Seeley, and Joel Mozer.
Experimental Evaluation of the Integrated WAVES-CSSM Models.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (December 1997).

Wetmore, Alan, Patti Gillespie, David Ligon, and Michael Seablom.
Wrapping an HLA-Compliant Interface Around the WAVES ToolKit.
Proceedings of the 21st Annual Review Conference on Atmospheric Transmission Models, Hanscom AFB, MA (9–11 June 1998).

Wetmore, Alan, Patti Gillespie, Andrew McCann, and John Schroeder.
EOSAEL and PC-EOSAEL.
Proceedings of the 1997 Battlespace Atmospherics Conference, San Diego, CA (December 1997).

Wetmore, Alan, Patti Gillespie, and John Schroeder.
EOSAEL and PC-EOSAEL.
Proceedings of the 21st Annual Review Conference on Atmospheric Transmission Models, Hanscom AFB, MA (9–11 June 1998).

Wetmore, Alan, Patti Gillespie, John Schroeder, and Andrew McCann.
EOSAEL and PC-EOSAEL.
Proceedings of the Target and Background Characterization SPIE Conference, Orlando, FL (April 1998).

Williams, H. L., B. M. Rice, and C. F. Chabalowski.
Investigation of the CH3CN-CO2 Potential Energy Surface Using Symmetry-Adapted Perturbation Theory.
Journal of Physical Chemistry, **A102** (27 August 1998), pp 6981–6992.

Williamson, C. K., R. G. Daniel, K. L. McNesby, and A. W. Miziolek.
Laser Induced Breakdown Spectroscopy (LIBS) for Real-Time Detection of Halon Alternative Agents.
Analytical Chemistry, **70**, 6 (1 March 1998), pp 1186–1191.

Wilson, D. K.
A Three-Dimensional Spectral/Correlation Model for Turbulent Velocities in a Convective Boundary Layer.
Boundary Layer Meteorology, **85** (October 1997), pp 35–52.

Wilson, D. K.
Coherence Calculations for Propagation Through Anisotropic Turbulent Velocity Fluctuations.
Presented at the 134th meeting of the Acoustical Society of America, San Diego, CA (2 December 1997).

Wilson, D. K.
Effect of Turbulent Anisotropy on Direction-Finding Using Acoustic Sensor Arrays.
Proceedings of the Battlespace Atmospherics Conference, San Diego, CA (2 December 1997).

Wilson, D. K.
Incorporation of Inhomogeneous Atmospheric Turbulence Into Numerical Propagation Calculations.
The Joint 16th International Congress on Acoustics/135th Meeting of the Acoustical Society of America, Seattle, WA (22 June 1998).

Wilson, D. K.
Large-Scale Atmospheric Turbulence Effects on Target Finding Using Acoustic Sensor Arrays.
21st Army Science Conference, Norfolk, VA (16 June 1998).

Wilson, D. K.
On the Application of Turbulence Spectral/Correlation Models to Sound Propagation in the Atmosphere.
Eighth International Symposium on Long-Range Sound Propagation, State College, PA (11 September 1998).

Wilson, D. K.
Performance Bounds for Acoustic Direction-of-Arrival Arrays Operating in Atmospheric Turbulence.
Journal of the Acoustical Society of America, **103** (March 1998), pp 1306–1319.

Wolfson, O., S. Chamberlain, S. Dao, L. Jiang, and G. Mendez.
Cost and Imprecision in Modeling the Position of Moving Objects.
Proceedings of the Fourteenth International Conference on Data Engineering (ICDE14) Orlando, FL (February 1998).

Wolfson, O., B. Xu, S. Chamberlain, and L. Jiang.
Moving Objects Databases: Issues and Solutions.
Tenth International Conference on Scientific and statistical Database Management, Capri, Italy (1–3 July 1998).

Wong, David, and Lawrence Carin.
Subbanding of Temporal and Spatial UWB SAR Imagery of Buried Mines.
SPIE Proceedings 1998, **3392** (1 April 1998), pp 678–685.

Wood.
Army Researchers Work on Realistic Holograms.
Army R&D Magazine (31 March 1998), pp 56–58.

Wraback, Shen, and Kuo.
All Optical Modulator Based on Virtual Exciton Effects in an Anisotropically Strained Multiple Quantum Well.
Proceedings of the 21st Army Science Conference (15 June 1998), pp 3–7.

Journal Articles and Presentations

Wraback, M., H. Shen, and J. Kuo.
Femtosecond All-Optical Modulator Based on Virtual Exciton Effects in an Anisotropically Strained Multiple Quantum Well.
Technical Digest of CLEO '98, **6** (3 May 1998),
pp 265–267.

Wright, T. W.
A Note on Frictional Release in Microcracks.
International Journal of Fracture (16 September 1998).

Wright, T. W.
Axial Plastic Waves in a Rod.
International Journal of Plasticity, **14**, 1-3
(1 January1998), pp 25–42.

Wright, T. W., M. A. Meyers, and V. Nesterenko.
Self-Organization in the Initiation of Adiabatic Shear Bands.
Acta Materiala, **46** (1 January1998), p 327–340.

Wright, T. W., and G. Ravichandran.
Canonical Aspects of Adiabatic Shear Bands.
International Journal of Plasticity, **13**, 4
(8 November 1997), pp 309–325.

Yaglom, A.
Statistical Fluid Mechanics of Turbulence in the Boundary Layer.
Stanford Center for Theoretical Physics.

Yao, J., C. J. Chen, K. K. Choi, W. Chang, and D. Tsui.
Energy Resolved Noise Measurements in Quantum-Well Infrared Photodetectors.
Applied Physics Letters, **72** (26 January 1998),
pp 453–456.

Yarlagadda, S., B. K. Fink, and J. Gillespie.
Resistive Susceptor Design for Uniform Heating During Induction Bonding of Composites.
Journal of Thermoplastic Composite Materials, **11**, 4
(1 July 1998), pp 321–337.

Zak, M., J. P. Zbilut, and R. E. Meyers.
A Terminal Dynamics Model of the Heartbeat.
Biological Cybernetics.

Zandi, B., and J. Gruber.
Crystal-Field Splitting Analysis of Trivalent Neodymium in Hexagonal (A-type) Neodymium Sesquioxide.
Journal of Physics and Chemistry of Solids, **15.9**
(30 September 1998), pp 1453–1457.

Zheng, J. P., and T. R. Jow.
Electrochemical Properties of Crystalline RuO_2 and Amorphous RuO_xH_2O Electrodes.
Materials for Electrochemical Energy Storage and Conversion II–Batteries, Capacitors, and Fuel Cells, **97**,
413 (1 January 1998).

Reports

Alexander, Peter, John C. Costanza, Francois J. Koenig, Hiralal C. Khatri, Kenneth Ranney, Chi Tran, and Roberto Innocenti.
Evaluation of Proposed Replacement for Longbow Radar Area Filter CFAR Device.
ARL-TR-1704, September 1998.

Anderson, Ronald D., George E. Keller, and Lydia L. Chang.
The Modular Artillery Charge System (MACS) XM232 Module-Ignition Process Modeling.
ARL-TR-1511, October 1997.

Anderson, William R.
Critical Review of the Heats of Formation of HNO and Some Related Species.
ARL-TR-1557, November 1997.

Andrese, Joseph A.
Bradley Linebacker Vehicular Dust Obscurant Effects on Stinger-RMP Seeker Target Acquisition Performance.
ARL-TR-1712, July 1998.

Andrese, Joseph A.
Methodology for the Analysis of Obscurant Attenuation Effects on Seeker Target Acquisition Performance Using Modeling and Simulation.
ARL-TR-1608, August 1998.

Andrese, Joseph A., Robert L. Laughman, and Thomas A. Jones.
Survivability Enhancement of the Theater High-Altitude Area Defense (THAAD) Ground Based Radar (GBR) System Using Visible and Infrared Smoke/Obscurants.
ARL-TR-1781, September 1998.

Argade, Shyam D.
A Lithium Polymer Electrolyte Battery.
ARL-CR-434, September 1998.

Arthur, J.
Title not available
ARL-TR-173, June 1998.

Arthur, Joy L., Brian G. Smith, and Glenn Brown.
1997 Review/Assessment of the RAH-66 Comanche Helicopter E3 Program.
ARL-TR-1540, July 1998.

Atkinson, Robert.
Shielding Effectiveness Measurements on Hardened, Transportable Facilities Using Transmission-Line Techniques.
ARL-TR-1083, September 1998.

Atkinson, Robert.
Status Report: High Altitude Electromagnetic Pulse Heavy Terminal Modification Support Efforts.
ARL-TR-1372, December 1997.

Atkinson, Robert, and Jere Dando.
Configuration Guidance for HEMP-Protected Facilities at Site R.
ARL-SR-55, September 1998.

Atkinson, Robert, and Ronald Reyzer.
MILSATCOM HEMP Survivability Program Report (Fort Ritchie and Fort Belvoir).
ARL-SR-56, April 1998.

Auvermann, Harry J.
Analytical Expression for the Decay History of an Atmospheric Turbule.
ARL-TR-1315, October 1997.

Figure 4. Target placement for LCERT experimental setup.

Source: Canh Ly and Herbert Dropkin, *Suppersolution for Low-Cost Enabling Radar Technology*, ARL-TR-1780.
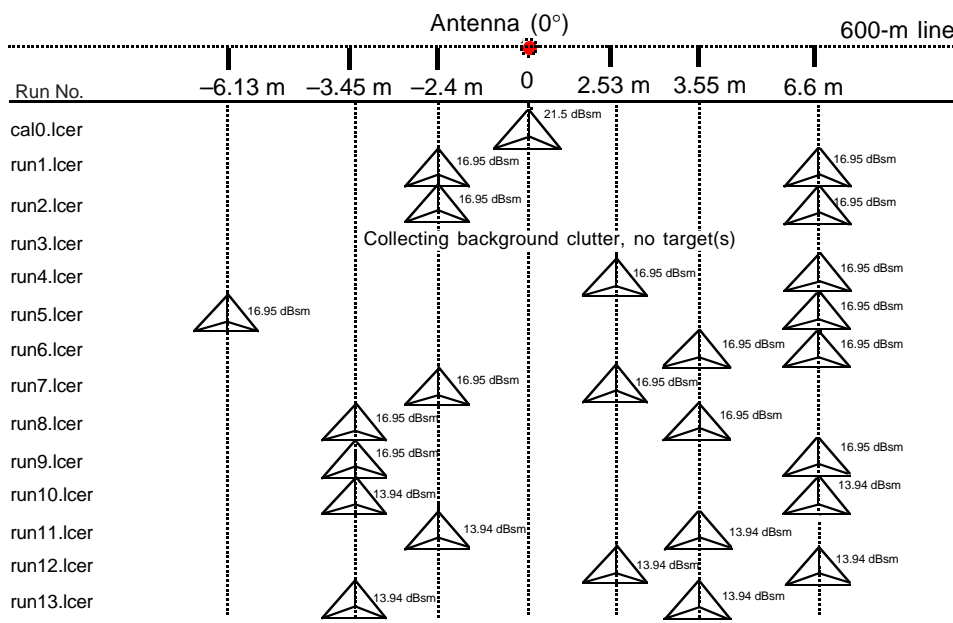
Reports

Avara, Elton P., Bruce T. Miers, Alan E. Wetmore, and Joy A. Fitzgerrel.
The Climatology Module CLIMAT.
ARL-TR-1566, July 1998.

Azuola, Francisco, Norman L. Badler, Pei-Hwa Ho, Suejung Huh, Evangelos Kokkevis, and Bond-Jay Ting.
Efforts in Preparation for Jack Validation.
ARL-CR-418, December 1997.

Bahder, Thomas B., and John D. Bruno.
Transient Response of an Electromagnetic Rail Gun: A Pedagogical Model.
ARL-TR-1663, May 1998.

Ballata, William O., J. Robert Klinger, and Shawn M. Walsh.
XM194 Gun Mount Shield: Processing in a Female Tool Utilizing Embedded Sensors for Process Control.
ARL-TR-1710, July 1998.

Bambha, Neal.
CMOS Design for a Smart Focal Plane Array.
ARL-TR-1501, July 1998.

Barker, Daniel J.
Rifle Firing and Sight Compatibility Study for a Concept Prototype of the Joint Service General Purpose Mask (JSGPM).
ARL-TN-116, August 1998.

Barker, Daniel J., and Judah Katznelson.
Rifle Firing and Sight Compatibility Study for the Advanced Crew Member Blower System (ACBS) and the Prototype ACBS.
ARL-TN-117, August 1998.

Beck, H. P., and L. G. Pierce.
The Effects of Movement and Intravehicular Versus Intervehicular Communication on C2V Crew Performance: Limited User Test Phase III.
ARL-TR-1428, January 1998.

Beck, W. A., Mark S. Mirotznik, and T. S. Faska.
Antenna Structures for Optical Coupling in Quantum-Well Infrared Detectors.
ARL-TR-1533, March 1998.

Behl, Wishvender K.
Corrosion of Aluminum Substrates in Lithium-Ion Batteries.
ARL-TR-1568, April 1998.

Behl, Wishvender K., and Edward J. Plichta.
An Electrolyte for Low-Temperature Applications of Lithium and Lithium-Ion Batteries.
ARL-TR-1705, September 1998.

Bell, G., and D. Hunt.
HE-WAM E3 Analysis.
ARL-TR-1729, September 1998.

Bender, Robert L., and Suzanne R. Stratton.
Radar Cross Section (RCS) Measurements of the Soviet 2S3 at Ka-Band for Three Configurations.
ARL-TR-1707, July 1998.

Bender, Robert L., and Suzanne R. Stratton.
RCS Measurements of the BMP-2 at X-, Ka-, and W-Band.
ARL-TR-1554, November 1997.

Berman, Morris.
Modal Analysis of the Prototype Heavy Composite Hull (HCH).
ARL-MR-387, 2/2/98.

Bhatt, R. T., and D. R. Hull.
Effects of Fiber Coatings on Tensile Properties of Hi-NiCalon SiC/RBSN Tow Composites.
ARL-TR-1552, December 1997.

Bhatt, R. T., and A. R. Palczer.
Effects of Surface Area, Polymer Char, Oxidation and Nio Additive Effects on Nitridation Kinetics of Silicon Powder Compacts.
ARL-TR-1551, March 1998.

Birk, Avi, and Marek Tarczynski.
Experiments with Liquid Propellant Jet Ignition in a Ballistic Compressor.
ARL-TR-1650, April 1998.

Bitting, Robert L., and Frederick H. Gregory.
Blast- and Fragment-Impact-Load Modeling for the Crusader System Vehicles.
ARL-TR-1651, April 1998.

Blanco, A.
Climatologically Derived Default Meteorological Data.
ARL-TR-1731, August 1998.

Blanco, A. J., and P. A. Haines.
Revisit the Field Artillery's Time-Space Wind Variability Equation.
ARL-TR-1627, April 1998.

Boesch, Harold E., Bruce T. Benwell, and David J. DeTroye.
Characterization of the Performance of Two Compressed Air Siren Acoustic Sources.
ARL-TR-1300, December 1997.

Boesch, H. Edwin Jr., Bruce T. Benwell, and Vincent J. Ellis.
Technical Recommendations and Formal Correspondence between the ARL Non-Lethal Acoustic Team and the ARDEC.
ARL-MR-394, March 1998.

Reports

Boschert, Eric J., and James F. Nealon.
Initial Susceptibility Analysis of Smoke/Obscurant Effects for the Preplanned Product Improvement (P3I) Brilliant Antiarmor (BAT) Munition.
ARL-TR-1756, August 1998.

Boyce, Gary L.
Wide-Area Munition (WAM) Explosively Formed Penetrator (EFP) Tests Against Energetic Reactive Armor (ERA).
ARL-TR-1746, August 1998.

Boyce, Gary L.
Characteristics and Terminal Ballistics of the Wide-Area Munition (WAM) Explosively Formed Penetrator (EFP).
ARL-TR-1589, January 1998.

Bradshaw, J. L., and R. P. Leavitt.
On Spatial Coherence of Electron Wavefunctions and the Transition from Miniband to Stark Ladder Electric Field Regimes in InGaAs/InAlAs-on-InP Superlattices.
ARL-TR-1536, February 1998.

Bromley, D.
Assessment of Low-Energy Laser Threats to Bradley A3 Optics.
ARL-TR-1482, April 1998.

Brown, Edward A.
Reinventing Government Research and Development: A Status Report on Management Initiatives and Reinvention Efforts at the Army Research Laboratory
ARL-SR-57, July 1998.

Brown, Tyler.
Damage Assessment for the 5 June 1997 ATACMS Block 1A Missile Firing at the White Sands Missile Range, NM.
ARL-TR-1588, January 1998.

Brundick, F. S., and G. W. Hartwig, Jr.
Context-Sensitive Compression of Database Updates for Wireless Transmission.
ARL-TR-1701, June 1998.

Bumbaugh, Mark E.
Survivability Analysis of the AN/MP 64 Ground Based Sensor (GBS) to Initial Nuclear Radiation (INR) Effects.
ARL-TR-1745, August 1998.

Bundy, Mark.
Thermal Response of Sapphire to Propellant Combustion.
ARL-TR-1654, April 1998.

Burcham, P. M.
Human Engineering Evaluation of the Omnitech Operator Control Unit (OCU).
ARL-TN-106, March 1998.

Burcham, Patricia M.
A Prediction of Soldier Retention of Tactical Unmanned Vehicle (TUV) Tasks.
ARL-TR-1609, July 1998.

Burkins, Matthew S., William A. Gooch, Jr., and David Weeks.
Performance of a 30-mm Armor-Piercing Discarding Sabot (APDS) Munition into Steel and Aluminum Alloy Armors.
ARL-MR-385, February 1998.

Burns, Bruce P., and James M. Bender.
High-Capacity Artillery Projectile (HICAP) Executive Summary.
ARL-TR-1755, August 1998.

Butler, Lee A.
A Vulnerablity Assessment of the Applique Computer.
ARL-TR-1528, October 1997.

Capobianco, Joseph, and Brian G. Smith.
Electromagnetic Analysis of the Individual Chemical Agent Detector (ICAD) Adapter Assembly.
ARL-TR-1592, December 1997.

Celmins, Aivars.
Battlefield Robot Cybernation and Navigation.
ARL-TR-1571, December 1997.

Chan, Lipchen Alex, and Nasser M. Nasrabadi.
Automatic Target Recognition Using Wavelet-Based Vector Quantization.
ARL-TR-1503, December 1997.

Chanault, T.
Analyses of Comanche Threat Countermeasure Project Threats, and IR/RF Acoustics Signatures Detectibility.
ARL-TR-546, January 1998.

Chanault, Klein, Hays.
Atmospheric Effects Analysis of Ground-Based, Acoustic, and IR Sensors Used to Acquire Ground Targets.
ARL-TR-1478, March 1998.

Chang, Albert L., and Barry A. Bodt.
JTCG/AS Interlaboratory Ballistic Test Program-Final Report.
ARL-TR-1577, December 1997.

Chenault, T.
Atmospheric Effects Analysis of Airborne IR Sensors Used to Acquire Ground Targets.
ARL-TR-1483, March 1998.

Chinella, John F., Brian Pothier, and Martin G. H. Wells.
Processing, Mechanical Properties, and Ballistic Impact Effects of Austempered Ductile Iron.
ARL-TR-1741, September 1998.

Reports

Coburn, William O., and John E. Tuttle.
Capacitive Sensor Technologies for Humanitarian Demining Applications.
ARL-TR-1580, June 1998.

Coburn, William, J.E.B. Tuttle, C. G. Reiff, H. L. Moore, and R. J. Shippell.
The Development of a Capacitive Sensor for Locating Shallow Buried Objects.
ARL-TR-1660, August 1998.

Coburn, W., J. Latess, C. Reiff, V. Ellis, J. Stewart, and C. Le.
Investigations on the Broadband Shielding Effectiveness of Metallized Glass Fiber.
ARL-TR-1376, March 1998.

Coffee, Terence P.
Progress in Modeling Pressure Oscillations in 30-mm Regenerative Liquid Propellant Guns (RLPGs).
ARL-TR-1582, January 1998.

Cogan, James, Edward Measure, and Daniel Wolfe.
Atmospheric Soundings in Near Real Time from Combined Satellite and Ground-Based Remotely Sensed Data.
ARL-TR-1481, October 1997.

Collins III, Joseph C.
Functional Estimation: The Asymptotic Regression Approach.
ARL-TR-1644, March 1998.

Comer, N.
Susceptibility Analysis of Enhanced Production Program Javelin Command Launch Unit.
ARL-TR-1544, May 1998.

Comer, N.
Susceptibility Analysis of a TOW ITAS Low Rate Initial Production Unit.
ARL-TR-1683, July 1998.

Comer, N. D., S. Z. Peplinski.
Optical/Electro-Optical Susceptibility Analysis of Thermal Weapon Sight.
ARL-TR-809, January 1997.

Condon, John A., and Michael S. L. Hollis.
Dynamic Analyses of the Mortar Dragster Tab Mechanism.
ARL-TN-107, April 1998.

Conroy, Paul J., Paul Weinacht, and Michael J. Nusca.
120-mm Gun Tube Erosion Including Surface Chemistry Effects.
ARL-TR-1526, January 1997.

Copenhaver, Michael J., James J. Williams, John C. Lowry, and Calvin DeWitt.
Bradley Fire Support Vehicle (BFIST) Demonstrator Crew Configuration.
ARL-TR-1430, November 1997.

Crawford, Dawn M., and Alan R. Teets.
The Effect of Strain on the Morphology and Mechanical Properties of Thermoplastic Polyurethane Elastomers (TPEs).
ARL-TR-1574, December 1997.

Cronkhite, J., B. Dickson, W. Martin, and G. Collingwood.
Operational Evaluation of a Health and Usage Monitoring System (HUMS).
ARL-CR-420, April 1998.

Cundiff, R.
Nose-on Measurements on Static ATGMs.
ARL-TR-834, June 1998.

D'Amico, William P. Jr.
Revolutionary Technologies for Gun-Launched Miniature Measurement Systems.
ARL-MR-400, July 1998.

D'Amico, William, Fred J. Brandon, Bradford S. Davis, Thomas E. Harkins, Micheal S. L. Hollis, and Eugene M. Ferguson.
Integration of a Range-Only Drag-Correction Device and Inertial Measurement Sensors into a NATO-Compatible Artillery Fuze.
ARL-MR-401, April 1998.

D'Arcy, Edward M.
The Effects of a Time-Space Weighted Model on the MLRS.
ARL-TR-1043, June 1998.

D'Arcy, Edward M.
A Low-Cost Alternative to the LDV for Measuring Low-Level Winds for the MLRS.
ARL-TR-1479, October 1997.

Davis, Bradford S.
Flight Simulator Performance Tests of the Boeing/ Draper Microelectromechanical Systems Gyroscope.
ARL-MR-388, March 1998.

Davis, B. S., T. G. Brown, C. R. Myers, and M.S.L. Hollis.
Ground and Flight Testing of Microelectromechanical Systems (MEMS) Sensors for the Commercial Technology Insertion Program (CTIP).
ARL-MR-384, January 1998.

Davis, Bradford S. and David J. Hepner.
Yawsonde and Microelectromechanical Systems (MEMS) Accelerometer Data of the M898 Sense and Destroy Armor (SADARM) Projectile During Flight Performance Tests (FPTs) II, III, and IV.
ARL-MR-417, September 1998.

Reports

Deitz, Paul H., and Michael W. Starks.
The Generation, Use, and Misuse of "PKs" in Vulnerability/Lethality Analyses.
ARL-TR-1640, March 1998.

Del Guercio, Miguel.
Oscillations on Electrothermal-Chemical (ETC) Closed-Chamber JA2 Burn-Rate Reductions.
ARL-TR-1572, December 1997.

Del Güercio, Miguel.
A Closed-Chamber Study on Plasma Capillaries.
ARL-TR-1764, September 1998.

Der, Sandor, Brian Redman, and Rama Chellappa.
Simulation of Error in Optical Radar Range Measurements.
ARL-TR-1488, January 1998.

Drysdale, William H.
The Development of an Advanced Sabot for Kinetic Energy Projectiles.
ARL-TR-1647, March 1998.

DuBois, Clarissa J., William O. Ballata, and Shawn M. Walsh.
Investigation of Geometric Effects on the SMARTweave Signal.
ARL-TR-1675, May 1998.

Durbin, David B., Richard Neal Armstrong, and Richard Nelson Armstrong.
An Evaluation of the Human-System Interface Characteristics of an Army Aviation Collective Task Training Simulator (Proof of Principle).
ARL-TR-1438, November 1997.

Dzindolet, Mary T., Debora R. Gleason, Cynthia Hernandez, Kristi Hill, Maria Jaquint, Francis Jette, Joanna Larsen, Nicole L. Oxley, and Linda G. Pierce.
Defining Training Objectives and Performance Measures in a Janus Battle Simulation
ARL-CR-433, August 1998.

Edge, Harris L., and Jubaraj Sahu.
Computational Modeling of a Finned Projectile by Chimera Technique.
ARL-TR-1443, December 1997.

Ellis, Vince.
Asset Stopper Program Phase I: Feasibility Assessment.
ARL-TR-1515, June 1998.

Eric J. Boschert, and Robert L. Laughman.
Obscurant Investigation Plan for the Employment of Grenades and Radiant Emulators for the Brilliant Antitank (BAT) Captive Flight Test (CFT) Follow-On Experiment to Drop Verification Test (DVT) - 6.
ARL-TN-110, July 1998.

Erline, Thomas F.
Transverse Dynamic Analyses of the Initial EX171 Projectile Fired from a 62-Caliber Naval Gun.
ARL-TR-1646, March 1998.

Erline, Tom, and Mark Bundy.
Peen-Shaping a Barrel Centerline.
ARL-TR-1561, December 1997.

Farrand, Timothy G., Wendy A. Leonard, and Konrad Frank.
A Terminal Ballistic Characterization of Two 125-mm Projectile Designs vs. Passive Range Targets.
ARL-MR-397, April 1998.

Fell, Nicholas F. Jr., John A. Vanderhoff, Rose A. Pesce-Rodriquez, and Kevin L. McNesby.
Characterization of Raman Spectral Changes in Energetic Materials and Propellants During Heating.
ARL-TR-1743, August 1998.

Ferguson, Eugene M., John A. Condon, and David N. Vazquez.
Battle Damage Assessment Telemeter (BDAT) System Impact Test.
ARL-MR-398, May 1998.

Ferry, E., J. Sahu, and K. Heavey.
Navier-Stokes Computations of Sabot Discard using Chimera Scheme.
ARL-TR-1524, October 1997.

Fitz, Frank, and Craig Gadd.
Design, Fabrication, and Testing of a High-Speed, Over-Running Clutch for Rotorcraft.
ARL-CR-429, August 1998.

Fountzoulas, Costas G., and Somnath Sengupta.
Mechanical Properties of Ferroelectric Composite Thin Films Fabricated by the Pulsed Laser Deposition Method.
ARL-TR-1673, May 1998.

Fountzoulas, C. G., J. D. Demaree, L. C. Sengupta, J. K. Hirvonen, and D. Dimitrov.
Wear and Tribological Properties of Silicon-Containing Diamond-Like Carbon Coatings Synthesized with Nitrogen, Argon Plus Nitrogen, and Argon Ion Beams.
ARL-TR-1703, June 1998.

Freedman, Eli.
BLAKE-A Thermodynamics Code Based on TIGER: Users' Guide to the Revised Program.
ARL-CR-422, July 1998.

Gazonas, G. A.
Impact Dynamics of the M557 Fuze.
ARL-TR-1713, July 1998.

Reports

Gill, Darshanpal S., and John Hopkins.
Microclimate Cooling System for Military Vehicles.
ARL-TR-1614, September 1998.

Gillespie, Patti, Alan Wetmore, and David Ligon.
Weather and Atmospheric Effects for Simulation.
ARL-TR-1721-1, September 1998.

Glumm, M. M., W. P. Marshak, T. A. Branscome,
M. McWesler, D. J. Patton, and L. L. Mullins.
*A Comparison of Soldier Performance Using Current
Land Navigation Equipment with Information Integrated
on a Helmet-Mounted Display.*
ARL-TR-1604, April 1998.

Gniazdowski, Neil N., and Frederick H. Gregory.
*Prediction of Shock Loads on a Lightweight Armored
Vehicle from an Artillery Attack.*
ARL-TR-1556, November 1997.

Goedecke, George H., Michael DeAntonio, and
Harry J. Auvermann.
*Structure Function Spectra and Acoustic Scattering Due
to Homogeneous Isotropic Atmospheric Turbule
Ensembles.*
ARL-TR-1518, August 1998.

Goldman, Geoffrey H.
RCS Validation of a Missile-Shaped Target at W-Band.
ARL-TR-1563, January 1998.

Gonzalez, R.
Survivability for FOTT System Analysis Report.
ARL-TR-1681, September 1998.

Gregory, Frederick H., and Neil M. Gniazdowski.
*Ballistic Shock Response Characteristics of Metallic and
Composite Bradley Fighting Vehicle Hulls.*
ARL-TR-1617, February 1998.

Grendahl, Champagne.
*Alternatives to 1,1,1 Trichloromethane Prior to Adhesive
Bonding and Non-Destructive Inspection.*
ARL-SR-61, January 1998.

Grendahl, Scott M.
*Investigation of the UH-60 Main Rotor Spindle
Assembly Retaining Rods P/N 70102-08102/-103.*
ARL-TR-1585, December 1997.

Guidos, Bernard J.
*Aerodynamic Heat Transfer Model for XM1007 TERM-
KE Fins.*
ARL-MR-408, August 1998.

Gurton, Kristan P., and Charles W. Bruce.
*Millimeter-Wavelength Optical Properties of
Experimental Graphitic Aerosols.*
ARL-TR-1463, November 1997.

Gurton, Kristan P., Charles W. Bruce, and
Allan V. Jelinek.
*Measured Microwave Attenuation for a Variety of
Fibrous Obscurants.*
ARL-TR-1514, August 1998.

Hackbarth, David, Michael Zoltoski, and
David Kleponis.
*The Performance of Near-Term Hypervelocity Exit
Criteria Armor vs. Ordnance Velocity Kinetic Energy
Penetrators.*
ARL-TR-1697, June 1998.

Halle, R., G. Simon, D. Holm, J. Chu, R. Collett,
D. Erickson, M. Bortak, A. Farina, W. Toledo, J. Bradas,
J. Creney, G. Johnson, M. Jones, B. Mitchell,
M. Schexnayder, G. Snyder, G. Jones, J. Vaughn,
S. Gray, D. Mackey, CPT A. Crowder, S. Solis,
L. Puckett, LTC J. Woznick, P. Hill, R. Yalamanchili,
L. Wilson, and P. Crise.
*Feasibility Study of Tank Extended Range Munition
(TERM) Concept-Phase.*
ARL-SR-62, April 1998.

Harkins, Thomas E., and T. Gordon Brown.
*Practicability Issues in Deriving Angular Rates from
Accelerometer Data for the 2.75-inch MK66 Rocket.*
ARL-MR-392, 2/2/98.

Hawley, J. K., J. P. Flanagan, T. D. Wilkinson, and
L. G. Pierce.
*Electrical Conduction Following the Explosion or
Ablation of Segmented Solid Conductors.*
ARL-TR-1437, December 1997.

Heid, Christy A., Brian P. Ketchel, Gary L. Wood,
Richard J. Anderson, and Gregory J. Salamo.
*3-D Holographic Display Using Strontium Barium
Niobate.*
ARL-TR-1520, February 1998.

Henderson, Jayme B.
*Narrow Band Susceptibility Prediction from the Impulse
Scatter Response of a Pseudomissile (Case I).*
ARL-TR-1035, April 1998.

Henmi, Teizi, and Robert Dumais, Jr.
Description of the Battlescale Forecast Model.
ARL-TR-1032, May 1998.

Henmi, Teizi, and Robert E. Dumais, Jr.
*The Battlescale Forecast Model (BFM) during the
TFXXI at Fort Irwin, CA.*
ARL-TR-1685, August 1998.

Henderson, J.
*Electromagnetic Interference Investigation of the TOW
Improved Acquisition System (ITAS).*
ARL-TR-1041, September 1998.

Reports

Henderson, J.
A Comparison of Military Standards 461-C and 461-D.
ARL-TR-1542, August 1998.

Henry, Zachary S., and William R. Stapper.
Evaluation of Navy 9 cst Oil in Bell Helicopter M412 HP Gearboxes.
ARL-CR-430, August 1998.

Hepner, David J., Michael S. L. Hollis, and Charles E. Mitchell.
Yawsonde Technology for the Jet Propulsion Laboratory (JPL) Free Flying Magnetometer (FFM) Program.
ARL-TR-1610, September 1998.

Herold, C.
Comparison between Granite Holiday Live-Fire and Simulation Missile Trajectories.
ARL-TR-1039, September 1998.

Herold, C.
Benign and Countermeasure Engagements.
ARL-TR-1369, September 1998.

Hickey, Charles A., Jr., and Samson V. Ortega, Jr.
Human Factors Ruggedness Investigation of the Enhanced Producibility Program (EPP) Command Launch Unit (CLU) for the JAVELIN Antitank Weapon System.
ARL-MR-377, October 1997.

Hill, Woznick, Lacetera.
Tank Extended Range Munition Front End Analysis.
ARL-TR-1593, January 1997.

Hocking, Daniel E., and Robert J. Harder.
Using Electronic Meeting Software for Army Exercises.
ARL-TR-1523, October 1997.

Hoffman, Robert C., and Wesley Tipton.
Analysis of Ferroelectric Thin Films Grown by MOD Process.
ARL-MR-375, February 1998.

Hollis, Michael S. L.
Structural Analysis of the Deployed Drag Surfaces of a Range Correction Module Concept for Low Cost Competent Munitions (LCCM).
ARL-TN-103, January 1998.

Hollis, Michael S. L.
Shock Testing of Pyrotechnic Actuators.
ARL-TN-109, May 1998.

Hollis, Michael S. L.
Shock Testing of an Endevco 8511A-20K Piezoresistive Pressure Transducer.
ARL-TN-108, May 1998.

Hollis, Michael S. L.
Design and Analysis of a Prototype Range Correction Device for a Mortar Projectile.
ARL-MR-411, August 1998.

Holtsberry, B.
Signature Measurements of ICTUS SKATE in Flight.
ARL-TR-1028, January 1997.

Hoppel, Christopher P. R., Travis A. Bogetti, and James F. Newill.
Method of Evaluating Moisture Diffusion Coefficients for Composite Sabots.
ARL-TR-1669, April 1998.

Howard, Stephen L., Richard A. Beyer, and Arthur Cohen.
Direct Laser Ignition of Gun Propellants: Simulator Tests to Screen Candidate Propellants.
ARL-TR-1715, July 1998.

Hsieh, Alex J., and Alex W. Gutierrez.
Miscibility Studies of Coextruded Polycarbonate/ Polymethyl Methacrylate Composites.
ARL-TR-1714, July 1998.

Huang, Yolin I.
The Effect of EFP Geometry on Ballistic Performance.
ARL-MR-366, October 1997.

Hull, David M., and Jonathan E. Fine.
Possible Upset Mechanisms of the PAM FTC Fuze Related to Explosively Generated Electric Charges: A Preliminary Study.
ARL-MR-373, March 1998.

Hummer, Charles R., and Paul R. Berning.
Mutual Inductance between a Coil and an Electromagnetically Launched Plate.
ARL-TR-1643, March 1998.

Hummer, Charles R., and Clinton E. Hollandsworth.
Experiments on the Interaction between Shaped Charge Jets (SCJs) and Axial Electric Currents: Pulsed Power Source and Diagnostics.
ARL-TR-1452, November 1997.

Hunt, D.
C2V Detection and Aimpoint Analysis Against a Projected Munition.
ARL-TR-1545, June 1998.

Ingham, Holly, Richard Helfman, Timothy Hanratty, John Dumer, and Edmund H. Baur.
Turbine Engine Diagnostics (TED): A Practical Application of a Diagnostic Expert System.
ARL-SR-60, January 1998.

Reports

Juarascio, Stephanie, Christopher Hunt, Bambi Steelman, Elaine Hunt, Michael Ferry, and Jim Hunt.
Pre-Shot Predictions of the Army Tactical Missile System (ATACMS) Block IA with the M74 Antipersonnel Antimateriel Bomblet (APAM).
ARL-MR-396, April 1998.

Jurado, G.
Preliminary Report on DETECT.
ARL-TN-98, July 1998.

Kaul, Roger, John McAdoo, and Tom Marynowski.
Final Report on Development and Testing of the Multifunction MMIC.
ARL-TR-1289, December 1997.

Kelley, John, John Beatty, Brian Placzankis, and Clifford Hubbard.
Mechanical Evaluation of Brass Plugs for HD Ton Containers and Examination of Corroded Plugs.
ARL-TR-1749, August 1998.

Kennedy, Edward W., and Randolph S. Coates.
Response of Tungsten Heavy Alloy Penetrators to an Explosive Reactive Armor Applique.
ARL-TR-1587, January 1998.

Kerris, Klaus, and Jeffrey Golden.
Initiation of TNT by Intense Relativistic Electron Beams.
ARL-TR-1277, December 1997.

Kieft, L. J. Vande, and W. W. Hillstrom.
Ignitability of Wood From Fragment Attack.
ARL-MR-381, December 1997.

Kinkennon, Amy E., Michael A. Schroeder, and Rose A. Pesce-Rodriguez.
Qualitative and Quantitative Analysis of Foreign Explosive Samples ARL-700 and ARL-800.
ARL-TR-1717, July 1998.

Kirby, S., Abel J. Blanco, and Edward M. Measure.
Vertical Extrapolation Model and Next Generation Radiometer Profile Comparisons and Artillery Accuracy.
ARL-TR-1732, August 1998.

Klopcic, J. Terrence, and David D. Lynch.
Static Characterization of the OF-540, 152-mm (TNT Filled) Artillery Projectile.
ARL-TR-1763, September 1998.

Klopcic, J. Terrence, Walton T. Robinson, Donald W. Petty, and Michael R. Sivack.
An Experiment, Analysis, and Model of Ballistic Shock.
ARL-MR-368, November 1997.

Knapik, J. J., R. J. De Pontbriand, W. H. Harper, R. A. Tauson, J. C. Swoboda, and N. W. Doss.
Feasibility of MOS Task Analysis and Redesign to Reduce Physical Demands in the U.S. Army.
ARL-TR-1594, January 1997.

Knapik, J. J., W. H. Harper, H. P. Crowell, K. L. Leiter, and B. T. Mull.
Standard and Alternate Methods of Stretcher Carriage: Performance, Human Factors, and Cardiorespiratory Responses.
ARL-TR-1596, January 1998.

Kogler, Timothy M.
Artillery Propelling Charge Loading Experiment.
ARL-MR-376, October 1997.

Kogler, T. M., and F. P. Mirabelle.
Delivery Accuracy Analysis for the 155-mm Lightweight XM777 Towed Howitzer.
ARL-MR-395, March 1998.

Korjack, T. A.
Viscous Damping in the Drive Train of a Gas Turbine Engine.
ARL-TR-1622, March 1998.

Korjack, T. A.
Transverse Electric Propagation of a Two-Dimensional Wave Traveling in a Gas Turbine Engine.
ARL-TR-1573, December 1997.

Korjack, T. A.
Vibration Analysis Applied to the Motions of a Gas Turbine Engine.
ARL-TR-1750, September 1998.

Kottke, Thomas.
A Database of Effective Infrared Signature Centroids Associated with Aerodynamically Heated Kinetic Energy Penetrators.
ARL-MR-390, March 1998.

Kottke, Thomas.
A Master Clock for Ballistic Tracking Systems.
ARL-MR-403, August 1998.

Kunkel, Robert W. Jr., and Brian G. Ruth.
Fault Tree Analysis of Bradley Linebacker.
ARL-TR-1716, September 1998.

Kunkel, Robert W., Jr., and Brian G. Ruth.
Quantifying Capability Vectors.
ARL-TR-1702, June 1998.

Lampson, Miles L., and Richard L. Summers.
Determination of the Yield Strength of a Molybdenum Jet.
ARL-TR-1639, March 1998.

Lara, R.
Special Electromagnetic Interference Investigations of the Longbow Hellfire Modular Missile System (LBHMMS).
ARL-TR-1014, January 1997.

Reports

Lara, R.
Special Electromagnetic Interference Investigations of the Battlefield Combat Identification System (BCIS).
ARL-TR-555, January 1997.

Leadore, Michael G.
Mechanical Response of Epoxy-Based Potting Samples.
ARL-MR-367, October 1997.

Leadore, Michael G.
High-Rate Mechanical Response of CL-20 and RDX-Based High-Energy Gun Propellants.
ARL-MR-382, December 1997.

Leadore, Michael G.
High-Rate Mechanical Response of CL-20/BAMO/ AMMO, CL-20/RDX/MQ/BAMO/AMMO-Layered, and RDX/NQ/BAMO/AMMO-Based Experimental Gun Propellants.
ARL-MR-399, May 1998.

Leadore, Michael G.
High-Rate Compression Testing of Layered High-Energy 120-mm Experimental Gun Propellants.
ARL-TR-1761, September 1998.

Lebsock, R.
Optical Signatures Code Flight Data Integration Simulation Effort.
ARL-TR-1636, June 1998.

Leedom, D. K., and J. Murphy, L. Adelman.
A Cognitive Engineering Analysis in Support of Future Task Force Tactical Operations Center (TOC) Concept Experimentation.
ARL-TR-1602, April 1998.

Lin, Hsiang Hsi, and Chuen-Huei Liou.
A Parametric Study of Spur Gear Dynamics.
ARL-CR-419, January 1998.

Lin, Ping-Hsun, Hsiang Hsi Lin, Fred B. Oswald, and Dennis P. Townsend.
Using Dynamic Analysis for Compact Gear Design.
ARL-TR-1818, September 1998.

Litvin, Faydor L.
Development of Gear Technology and Theory of Gearing.
ARL-TR-1500, January 1997.

Litz, Marc, Romeo D. del Rosario, and Keith Leshick.
Effects of a Radome on a UWB Detection System.
ARL-SR-73, September 1998.

Liu, Jiang, David C. Morton, Y. Li, E. W. Forsythe, and G. S. Tompa.
Developing High-Efficiency Zn2SiO4:Mn Thin Film Phosphors for Flat Panel Cathodoluminescent Displays.
ARL-TR-1502, December 1997.

Figure 5. C-CSL model results for case 5: (a) adjacent grid wind speed (m/s) profiles and (b) adjacent grid momentum flux (m^2/s^2) profiles.

Source: Arnold Tunick, *Modeling and Analysis of Adjacent Grid Point Wind Speed Profiles Within and Above a Forest Canopy*, ARL-MR-432.
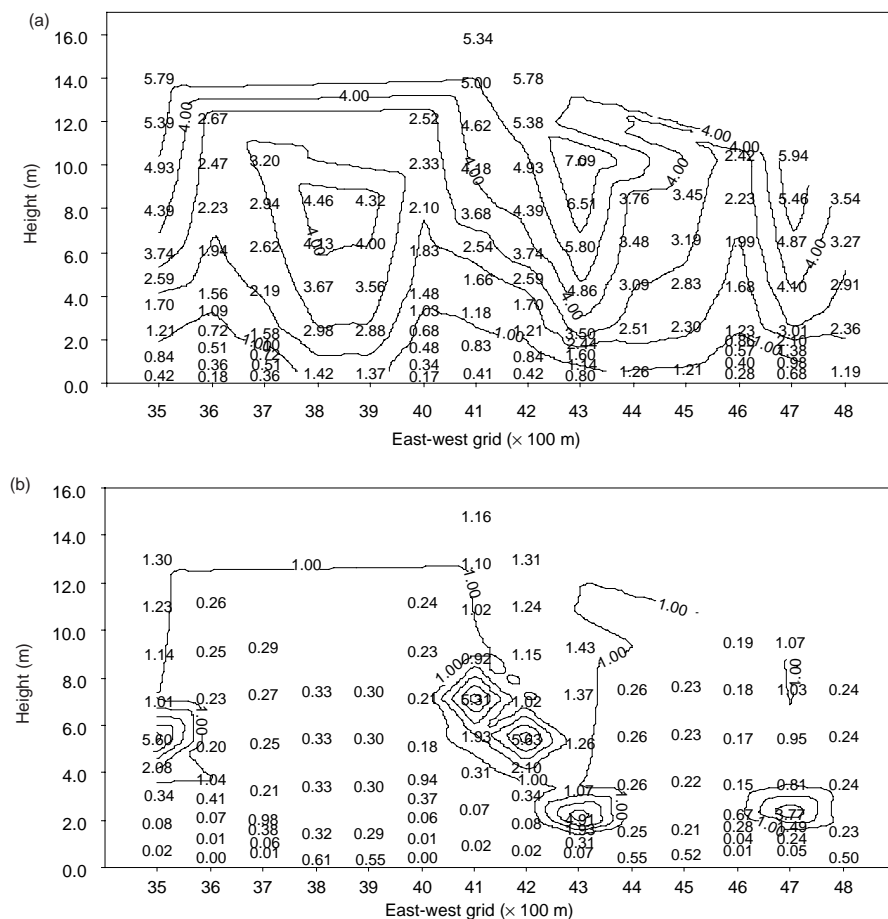
Reports

Lottero, Richard E.
Responses of a Water Barricade and an Acceptor Stack to the Detonation of a Donor Munitions Stack.
ARL-TR-1600, March 1998.

Lottero, Richard E.
Blast Loading on an M1 Main Battle Tank From an Explosive Standoff Minefield Bracer in Tow.
ARL-TR-1601, March 1998.

Lums, J., J. Lurski, and A. Barnes.
Interim Information Warfare Vulnerability Analysis of the Appliqué System.
ARL-TR-1543, June 1998.

Magness, Lee S., Wendy A. Leonard, Deepak Kapoor, Moon Chung, and Jeffrey Trogolo.
The Performance and Deformation Behavior of Oriented Columnar-Grained Tungsten Polycrystalline Penetrators.
ARL-TR-1666, May 1998.

Majeski, John D., Paul Sebula, Edward Donovan, and Thomas Jones.
NBC Contamination Survivability Analysis of the Linebacker.
ARL-TR-1371, February 1998.

Malkin, Frank J., Laurel E. Allender, Troy D. Kelley, Pat O'Brien, and Steve Graybill.
Joint Base Station Variant 1 MOS-Workload-Skill Requirements Analysis.
ARL-TR-1441, November 1997.

Mallory, Timothy D., and Ronald A. Weiss.
Survivability Considerations for the "Take Charge and Move Out" E-6A/B Aircraft Nuclear Defense Plan.
ARL-TR-1439, November 1997.

Mallory, Timothy D.
Nuclear, Biological, and Chemical Contamination Survivability (NBCCS) Assessment of the OH-58D(I) Kiowa Warrior Helicopter.
ARL-TR-1611, August 1998.

Mares, A.
SADARM IPT/Target/Clutter Analysis.
ARL-TR-1546, June 1998.

Marvel, Lisa M., Charles G. Boncelet, Jr., and Charles T. Retter.
Methodology of Spread-Spectrum Image Steganography.
ARL-TR-1698, June 1998.

Masciulli, M.
EPLRS Situation Analysis Report Version 1.
ARL-TR-1539, June 1998.

Maxwell, Thomas E.
Countermeasures Description P3I BAT Captive Flight Test 2 Grayling, MI January 1998.
ARL-TR-1632, 7/31/98.

Maxwell, Thomas E., and William R. Peel.
Winter 1997 W-Band Clutter Characterization.
ARL-TR-1537, October 1997.

McGuire, Dennis W.
Continuous Lattices and Mathematical Morphology.
ARL-TR-1548, June 1998.

McGuire, Dennis W.
Lattice-Algebraic Morphology.
ARL-TR-1728, September 1998.

McQuaid, M. J., J. L. Watson, and D. L. Pilarski.
UV/Vis Emission from Shock-Loaded Liquid Propellant XM46.
ARL-TR-1672, May 1998.

McQuaid, M. J., H. Burden, and W. Lawrence.
Real-Time Laser-Based Detection of Chemical Intermediate Formation in Liquid Propellant XM46 Shock-Loaded via an Electric Gun.
ARL-TR-1625, March 1998.

McWilliams, Gary.
Real-Time Thermal Risk Assessment for the Dismounted Soldier.
ARL-TR-1022, March 1998.

Miletta, Joseph R.
Survivability to Electromagnetic Threats, Digital Battlefield.
ARL-TR-1676, July 1998.

Nagpal, Krishen L.
Preliminary Report on the Enhancement of Theater High-Altitude Air Defense (THAAD) Ground-Based Radar (GBR) by the Use of Millimeter Wave (MMW) Obscurants.
ARL-TR-1591, January 1998.

Nealon, James F.
Smoke/Obscurant Effects for Javelin Missile System Low-Rate Initial Production (LRIP).
ARL-TR-1711, July 1998.

Neiderer, Andrew M., Mark A. Thomas, and Richard Pearson.
A Fracturing of Polygonal Objects.
ARL-TR-1649, April 1998.

Newill, James F., Christopher P. R. Hoppel, and William A. Drysdale.
Comparison of Launch Mechanics and Dynamics from the M1A1 M256 Gun System for the M829A2 Kinetic Energy Long-Rod Fin-Stabilized Projectile Containing Different Penetrator Materials.
ARL-TR-1671, May 1998.

Reports

Newill, James F., Bruce P. Burns, and Stephen A. Wilkerson.
Overview of Gun Dynamics Numerical Simulations.
ARL-TR-1760, September 1998.

Nguyen, K., W. M. Bollen, R. Seeley, D. Smithe, George Merkel, R. Fleetwood, and R. B. Miller.
Aurora Pulse Shape Sharpening via Beam Propagation through Performed Plasma Channel.
ARL-TR-1444, March 1998.

Nguyen, Hung M., Joseph A. Penn, Teresa A. Kipp, Giap D. Huynh, and Janice F. Colby.
CREATION Scene Generation for ATR Applications.
ARL-TR-1489, April 1998.

O'Brien, Sean G., and Donald W. Hoock.
STABIC-A Method for Inclusion of Fractal Statistics in Obscurant Transport Models.
ARL-TR-1375, April 1998.

Oberle, William.
DEA-G-1060 German/U.S. Workshop on Electrothermal-Chemical Gun Propulsion.
ARL-SR-75, August 1998.

Oberle, William, and Nora De Vries.
Fast-Core Propellant Development for Advanced Solid-Propellant Tank Gun Applications
ARL-TR-1626, March 1998.

Oberle, William, Kevin White, and John Powell.
JANNAF Combustion Subcommittee Workshop: Plasma/Propellant Interaction and Propellant Temperature Sensitivity Reduction using Electrothermal-Chemical (ETC) Propulsion Concepts.
ARL-TR-1579, December 1997.

Pai, Sharmila V., Cary F. Chabalowski, and Betsy M. Rice.
Ab Initio and DFT Potential Energy Surfaces for Cyanuric Chloride Reactions.
ARL-TR-1718, July 1998.

Paicopolis, Peter S., Michael R. McNiece, David L. Haavig, John K. Nussbaum, and Carl F. Steiner.
An Autonomous Survivability Demonstrator.
ARL-TR-1619, January 1998.

Paicopolis, Peter S., Russell N. Bennett, David J. Fortney, John M. Brupbacher, Donald R. Sidwell, Susan N. Clarkson, and Matthew G. Swain.
A Survivability System.
ARL-TR-1618, January 1998.

Patterson, Carolyn J.
The Tank Extended Range Munition Probability of Encounter Study.
ARL-TR-1612, August 1998.

Patterson, Phillip, and William Lum.
Laser Scattering Particle Size Distribution Analyses of Pigments.
ARL-TR-1786, September 1998.

Patton, Brendan J.
Charge Development and Launch Dynamics Evaluation for the Naval Undersea Warfare Center 40-mm Launched Supercavitating Projectile.
ARL-TN-111, August 1998.

Pendleton, J. David, and Steven C. Hill.
Collection of Emission from an Oscillating Dipole Inside a Sphere: Analytic Integration over a Circular Aperture.
ARL-TR-1399, December 1997.

Pendleton, J. David, David L. Rosen, and James B. Gillespie.
Light Scattering from an Optically Active Sphere into a Circular Sensor Aperture.
ARL-TR-1474, December 1997.

Pepi, Marc S.
Examination of BSU-86/B Setscrews.
ARL-MR-379, November 1997.

Pepi, Marc S.
First Article Inspection of BSU-33B/B Bomb Fins.
ARL-MR-378, November 1997.

Pesce-Rodriguez, Rose.
Analysis of Contaminant on Composite Sabots From Sealed M829A2 Tank Rounds Conditioned at High Temperature and Humidity.
ARL-MR-391, April 1998.

Pesce-Rodriquez, Rose A., and Michael A. Schroeder.
Investigation of Friction-Sensitive Combustible Cartridge Cases.
ARL-TR-1656, May 1998.

Pesce-Rodriquez, R., R. Leffers, and P. Sagear.
Effect of a Warm, Moist Environment on JA2 Gun Propellant.
ARL-TR-1529, October 1997.

Pesce-Rodriguez, Ann, Pamela Kaste, Jeffrey Morris, Michael Schroeder, and Kevin McNesby.
Qualitative and Quantitative Analysis of a Foreign Explosive.
ARL-TR-1624, March 1998.

Pesce-Rodriguez, Rose, William F. Oberle, Miguel Del Guercio, Nicholas F. Fell, Jr., Rita Leffers, and Rose Greer.
Plasticizer Migration in Layered Gun Propellants.
ARL-TR-1559, December 1997.

Reports

Peterson, L., W. A. Ross, and L. G. Pierce.
Crusader Battle Lab Warfighting Experiment (BLWE) 1: Assessing Tactics, Techniques, and Procedures (TTPs) for Crusader Units within a Synthetic Environment.
ARL-TR-1597, January 1998.

Phillabaum II, Robert A., and Randall S. Coates.
Kinetic Energy (KE) Defeat of Explosive Reactive Armor (ERA) by a Novel Concept - Conceptual Design by General Research Corporation (GRC).
ARL-TR-1473, August 1998.

Pinnick, Ronald G., Steven C. Hill, Paul Nachman, Stanley Niles, Gorden Videen, Gang Chen, and Richard K. Chang.
Aerosol Fluorescence Spectrum Analyzer for Rapid Measurement of Single Micrometer-Sized Airborne Biological Particles.
ARL-TR-1665, May 1998.

Pizzillo, Thomas J.
Electrostatic Charge Measurements of a UH-60A Helicopter.
ARL-MR-380, May 1998.

Pizzillo, Thomas J., H. and Bruce Wallace.
A Technique for Calibrating the Phase Detector of Wideband Radars Using a Phase Modulation and Demodulation Scheme.
ARL-TR-1567, June 1998.

Podlesak, Thomas F., and Sol Schneider.
Russian Dynistors and Dynistor-Based Pulsers.
ARL-TR-1679, September 1998.

Polesne, John T., and Robert Shnidman.
Behind-Armor Debris (BAD) Analysis of the Advanced Field Artillery System (AFAS) Titanium Base Armor Concept.
ARL-TR-1655, April 1998.

Prakash, Anand.
Simulations of Active Protection Countermunition Concepts for Defeat of Kinetic Energy (KE) Projectiles.
ARL-TR-1555, November 1997.

Pressel, Daniel M.
Early Results from the Porting of the Computational Fluid Dynamics Code, F3D, to the Silicon Graphics Power Challenge.
ARL-TR-1562, December 1997.

Price, Albert W., Jr.
Experimental Results: Vapor Infiltration into Simple Structures and the Army Tactical Shelter S280.
ARL-MR-410, August 1998.

Pritchard, Dennis S.
BRL 3.2 Penetration into S2 Glass Composite with a Fuzzy Logic Application.
ARL-TR-1576, December 1997.

Raftenberg, Martin N.
Behind-Armor Debris Calculations with the EPIC Wavecode.
ARL-TR-1748, August 1998.

Raftenberg, Martin L.
Damage and Strength Effects in Steel Plates Perforated by Tungsten Rods.
ARL-TR-1578, December 1997.

Raglin, Adrienne.
Cortical Oscillations in the Visual Cortex.
ARL-TR-1558, November 1997.

Raglin, Adrienne, and John Johnson.
Investigation of Cortical Oscillation Models within the Visual Cortex.
ARL-TR-1512, October 1997.

Ray, S. E.
A Numerical Study of the Injector Region of the 30-mm Regenerative Liquid Propellant Gun.
ARL-CR-336, October 1997.

Reader, T.
Proceedings of the Workshop on Multireflective Models of Agent Behavior.
ARL-SR-63, August 1998.

Reiff, Christopher G.
Fort Meade Earth Terminal HEMP Test Report.
ARL-MR-266, November 1997.

Reiff, Christian.
An Amplified Broadband Dipole E-Dot Sensor.
ARL-TR-1613, March 1998.

Reiff, Christian, and Ronald J. Reyzer.
Shielding Effectiveness of Precast Concrete Repeater Buildings.
ARL-MR-334, February 1998.

Retter, Charles and Douglas Gwyn.
Vulnerability Assessment of the InterNetwork Controller (INC).
ARL-MR-412, September 1998.

Rice, Betsy M., William Mattson, and Samuel F. Trevino.
Molecular Dynamics Investigation of the Desensitization of Detonable Material.
ARL-TR-1744, August 1998.

Rice, Betsy M., and Cary F. Chabalowski.
Ab Initio and Nonlocal Density Functional Study of 1,3,5-trinitro-s-triazine (RDX) Conformers.
ARL-TR-1586, December 1997.

Richardson, Sharon L., and William F. Oberle.
The Influence of Propellant Loading Density on Computed Burn Rate in a Mini-Closed Bomb.
ARL-MR-404, August 1998.

Reports

Riely, Brian.
Comparison of IR and MMW Imager Performance.
ARL-TR-1301, December 1997.

Roach, Lisa K.
Ballistic Vulnerability Post-Shot Analysis of the Mast-Mounted Assembly (MMA) of the AH-64D Modernized Apache (LONGBOW APACHE).
ARL-TR-1652, April 1998.

Robinson, Dale, and William Ruff.
UXO Detection Using Optical Sensors.
ARL-MR-226, October 1997.

Robinson, Charles H., and Robert H. Wood.
Development of an Ultra-Miniature Monolithic Mechanical Safety and Arming Device for High-G Applications.
ARCCD-TR-98006, July 1998.

Runyeon, John W.
Passive Roof Armor Technologies for Shaped Charge Bomblet Defeat.
ARL-TR-1527, October 1997.

Rupert, Nevin L., and Fred I. Grace.
Modeling Ceramic Defeat Mechanisms and Variations in Ballistic Data.
ARL-TR-1670, May 1998.

Russell, Louis M., Douglas Thurman,
Steven A. Hippensteele, and Philip E. Poinsatte.
Measurements of Heat Transfer, Flow, and Pressures in a Simulated Turbine Blade Internal Cooling Passage.
ARL-TR-923, December 1997.

Ruth, Brian G.
Theory and Design of Capability Networks.
ARL-TR-1653, April 1998.

Sadler, Brian M., and Ananthram Swami.
Analysis of Wavelet Transform Multiscale Products for Step Detection and Estimation.
ARL-TR-1664, August 1998.

Sahu, Jubaraj, Richard J. Benney, and
Sekaripuram V. Ramakrishnan.
Computational Fluid Dynamics Modeling of Parachute Clusters.
ARL-TR-1440, November 1997.

Sahu, Jubaraj, Harris L. Edge, Karen R. Heavey, and
Earl N. Ferry.
Computational Fluid Dynamics Modeling of Multi-Body Missile Aerodynamic Interference.
ARL-TR-1765, August 1998.

Savick, D. S.
A Comparison of Various Types of Head-Related Transfer Functions for 3-D Sound in the Virtual Environment.
ARL-TR-1605, April 1998.

Scheffler, Daniel R.
Modeling Threshold Velocity of Hemispherical and Ogival-Nose Tungsten-Alloy Penetrators Perforating Finite Aluminum Targets.
ARL-TR-1583, December 1997.

Schipani, Salvatore P., Richard S. Bruno,
Michael A. Lattin, Bobby M. King, and Debra J. Patton.
Quantification of Cognitive Process Degradation While Mobile, Attributable to the Environmental Stressors Endurance, Vibration, and Noise.
ARL-TR-1603, April 1998.

Schoenfeld, Scott.
Dynamic Behavior of Polycrystalline Tantalum.
ARL-TR-1560, December 1997.

Schoenfeld, S. E., and R. J. Asaro.
Through-Thickness Texture Gradients in Rolled Polycrystalline Alloys.
ARL-TR-1531, October 1997.

Schoenfeld, S. E., S. Ahzi, and K. S. Vecchio.
Modeling Dynamic Behavior and Texture Evolution in Pure Tantalum (Ta).
ARL-TR-1530, October 1997.

Schraml, Stephen J., and Kent D. Kimsey.
Smoothed Particle Hydrodynamics Simulation of Disk-Shaped Penetrator Impact.
ARL-TR-1766, August 1998.

Scott, Duncan L.
Dry In-Line Thermoplastic Matrix Impregnation-SBIR Phase II - Prototype System Development and Evaluation.
ARL-CR-338, February 1998.

Scribner, David R.
Skill Level 10 Navigational Skills: An Examination of Tactical Unmanned Vehicle (TUV) Soldier-Marine Capabilities.
ARL-TR-1599, March 1998.

Scribner, David R.
Skill Level 10 Operations and Unit Maintenance Skills: An Examination of Tactical Unmanned Vehicle (TUV) Soldier-Marine Capabilities.
ARL-TR-1767, August 1998.

Scribner, David R., and James W. Gombash.
The Effect of Stereoscopic and Wide Field of View Conditions on Teleoperator Performance.
ARL-TR-1598, March 1998.

Seger, Lawrence D., Jeffrey P. Rasimas,
Rose Pesce-Rodriguez, and Robert Fifer.
Chemical Modification and Attempted Polymerization of Self-Assembled Monolayers of Hexadecanedioic Acid at Aluminum Surfaces.
ARL-TR-1553, November 1997.

Reports

Segletes, Steven B.
Thermodynamic Relations along the Principal Hugoniot.
ARL-TR-1641, March 1998.

Segletes, Steven B.
The Vibrational Stiffness of an Atomic Lattice.
ARL-TR-1757, September 1998.

Segletes, Steven B.
A Compact Analytical Fit to the Exponential Integral E1(x).
ARL-TR-1758, September 1998.

Segletes, Steven B., Patsy Simmers, and Ashutosh K. Jhaveri.
Computational Study of Candidate Lightweight Disposable Disrupter (LIDD) Projectile Design Concepts.
ARL-TR-1620, February 1998.

Sevachko, M.
Technical Data Memorandum on Simulation Results of Stinger Basic Versus Boeing 747 Performed During September 1997.
ARL-TN-96, January 1997.

Shires, Dale.
MPI and HPF Performance in a DEC Alpha Cluster.
ARL-TR-1668, May 1998.

Sincebaugh, Patrick, William Green, and Gerard Rinkus.
A Graphical User Interface (GUI) for Automated Classification of Bradley Fight Vehicle Shock Absorbers.
ARL-TR-1621, February 1998.

Smith, Brian G., and Judith T. McCullen.
Chemical Agent Challenge Analysis for the RAH-66 Comanche: Blood Agents, AC and CK.
ARL-TR-1595, January 1998.

Snoha, Daniel J., William O. Ballata, and Shawn M. Walsh.
SMARTweave Sensors for Assessing Ballistic Damage in Feasibility Study.
ARL-TR-1674, May 1998.

Sola, Marcos C., E. Glenn Dockery, Joseph A. Penn, Paul L. Zirkle, Charles R. Kohler, Teresa A. Kipp, and Janice F. Colby.
A Proposal for an Active/Passive Signature Enhancer for Identification Friend-or-Foe.
ARL-TR-1377, October 1997.

Sola, Marcos C., Mark W. Orletsky, Quochien B. Vuong, and Charles R. Kohler.
A Generic Validation Methodology for Multispectral Synthetic Scene Generator Models—Interim Report.
ARL-TR-1446, October 1997.

Soln, Josip Z.
Fluid Dynamics Assessments of Deposition and Infiltration Models.
ARL-TR-1525, October 1997.

Sonnenwald, Diane H., Linda G. Pierce.
Optimizing Collaboration in Battalion Staff Elements.
ARL-CR-435, September 1998.

Sorensen, Brett R., Kent D. Kimsey, and Jonas A. Zukas.
Cartridge-Based Systems Analysis of Jacketed Penetrator Performance.
ARL-TR-1638, March 1998.

Sorescu, Dan C., Donald L. Thompson, and Betsy M. Rice.
Molecular Packing and NPT-Molecular Dynamics Investigation of the Transferability of the RDX Intermolecular Potential to 2,4,6,8,10,12-Hexanitrohexaazaisowurtzitane (HNIW).
ARL-TR-1657, May 1998.

Starkenberg, John, and Toni M. Dorsey.
An Assessment of the Performance of the History Variable Reactive Burn Explosive Initiation Model in the CTH Code.
ARL-TR-1667, May 1998.

Stefanescu, S., R. G. DeAnna, and Mehran Mehregany.
Experimental Performance of a Micromachined Heat Flux Sensor.
ARL-MR-363, April 1998.

Strakovskly, L., A. Cohen, R. Fifer, R. Beyer, and B. Forch.
Laser Ignition of Propellants and Explosives.
ARL-TR-1699, June 1998.

Stratton, Sue, and Robert L. Bender.
Radar Cross Section (RCS) Measurements of a BTR-80 at Ka-Band.
ARL-TR-1616, March 1998.

Stratton, Suzanne, H. Bruce Wallace, and Robert L. Bender.
Radar Cross Section (RCS) Measurements of the ZSU-23-4 at X-, Ka-, and W-Band.
ARL-TR-1722, September 1998.

Subbarao, Madhavi, and Ramaswamy Murali.
A Study of Packet Routing in Mobile Radio Networks.
ARL-CR-337, January 1998.

Swab, Jeffrey J., and George D. Quinn.
Effect of Precrack "Halos" on KIC Determined by the Surface Crack in Flexure Method.
ARL-TR-1575, December 1997.

Reports

Tatum, John T., and Brian B. Luu.
Electromagnetic Compatibility Analysis for a Conceptual Radio Frequency System.
ARL-TR-1550, May 1998.

Tatum, John, Charles Brown, Mark Berry, Carl Lazard, and David Conrad.
High Power Radio Frequency/Microwave Live Fire Test Methodology Development and Demonstration Using a Helicopter Test Bed.
ARL-TR-1581, July 1998.

Tauson, Richard A., N. William Doss, and David M. Harrah.
Description and User Acceptance Reports of Current U.S. Army Aircrew Life Support Equipment (ALSE) and Aviator Clothing and Individual Equipment (CIE).
ARL-MR-386, December 1997.

Tayag, Tristan J., and David M. Mackie.
A Technique to Ease the Fabrication Tolerance of Integrated Optical Power Splitters.
ARL-TR-1517, March 1998.

Cpt Theodoss, Gregory Marez, and Libby Escudero.
Information System Susceptibility Analysis of CHS-2 System.
ARL-TR-1684, September 1998.

Thomas, M. A.
The ARL Army Experiment 3 Individual Combatant/ Military Operations on Urbanized Terrain (MOUT) Demonstration.
ARL-TN-102, January 1998.

Thomas, Diane, and Sandor Der.
Voting Techniques for Combining Multiple Classifiers.
ARL-TR-1549, March 1998.

Thompson, John L., Timothy M. Kogler, and J. Kevin Boyd.
Aiming and Pointing System (APS) Concept Evaluation Program (CEP II).
ARL-MR-389, March 1998.

Tidrow, M. Z.
QWIP and MCT for Long Wavelength and Multicolor Focal Plane Array Applications.
ARL-TR-1534, May 1998.

Tofsted, D., and S. O'Brien.
Three-Dimensional Radiative Transfer Modeling of Tropospheric Atmospheres.
ARL-TR-1629, March 1998.

Tran, P. K., G. P. Wren, T. P. Coffee, J. DeSpirito, and S. E. Ray.
Analysis of Effects of Viscoelastic Outer Piston on Pressure Oscillations in a 155-m Regenerative Liquid Propellant Gun.
ARL-TR-1513, October 1997.

Tunick, Arnold D.
Evaluation of an Atmospheric Microclimate Model.
ARL-TR-1459, November 1997.

Tunick, Arnold D.
The Refractive Index Structure Parameter/Atmospheric Optical Turbulence Model: CN2.
ARL-TR-1615, April 1998.

Tuttle, John E. B.
Inspection of Shipboard Conduits and Shield to Ground Adapters by Low Bandwidth Pulsed Current Injections.
ARL-MR-354, December 1997.

Tzeng, Jerome T.
Viscoelastic Response of Prestressed Composite Cylinders for Rotating Machinery Applications.
ARL-TR-1590, January 1998.

Uppuluri, Srinivas, Petar R. Dvornic, June W. Klimash, Peter I. Carver, and Nora C. Beck Tan.
The Properties of Dendritic Polymers I: Generation 5 Poly (amidoamine) Dendrimers.
ARL-TR-1606, May 1998.

Van Flandern, Tom, and Thomas B. Bahder.
Performance of the Miniature Airborne GPS Receiver.
ARL-TR-1739, July 1998.

Venkatraman, Mahesh, Heesung Kwon, and Nasser M. Nasrabadi.
Video Compression Using Vector Quantization.
ARL-TR-1535, May 1998.

Vezzoli, G. C., M. F. Chen, F. Craver, and R. N. Katz.
Materials Science Studies of High-Temperature Superconducting Ceramic Oxides.
ARL-TR-1570, December 1997.

Videen, Gorden, and Dat Ngo.
Light-Scattering Multipole Solutions for a Cell.
ARL-TR-1725, September 1998.

Videen, Gorden, Ronald G. Pinnick, Dat Ngo, Qiang Fu, and Petr Chylek.
The Asymmetry Parameter and Aggregate Particles.
ARL-TR-1393, October 1997.

Videen, Gorden, Paul Pellegrino, Dat Ngo, Paul Nachman, and R. G. Pinnick.
Qualitative Light-Scattering Angular Correlations of Conglomerate Particles.
ARL-TR-1396, November 1997.

Vrabel, Michael J.
Basin Sculpting a Hybrid Recurrent-Feedforward Neural Network.
ARL-TR-1522, January 1998.

Reports

Wald, Joseph K.
Trajectory Analysis Methodology for the Tank Extended Range Munition.
ARL-TR-1607, June 1998.

Wallace, H. Bruce, and Thomas J. Pizzillo.
A Technique for Calibrating the Phase Detector of a Wideband Radar Using an External Target.
ARL-TR-1521, March 1998.

Walter, J. W., and P. W. Kingman.
High-Obliquity Impact of a Compact Penetrator on a Thin Plate: Penetrator Splitting and Adiabatic Shear.
ARL-TR-1584, December 1997.

Walters, William P., and Daniel R. Scheffler.
Arresting the Collapse of a Shaped Charge.
ARL-TR-1623, March 1998.

Walther, Robert E.
Results of Basic Combined Effects Testing and a Method to Predict Combined Damage Effects for Other Small High-Explosive Incendiary (HEI) Projectiles- Annex: Projectile Characteristics and Static Fragmentation Data.
ARL-TR-1510, October 1997.

Wang, Lin-Cheng, Sandor Der, and Nasser M. Nasrabadi.
Automatic Target Recognition Using a Modular Neural Network.
ARL-TR-1659, May 1998.

Weerasooriya, Tusit.
Deformation Behavior of 93W-5Ni-2Fe at Different Rates of Compression Loading and Temperatures.
ARL-TR-1719, July 1998.

Weerasooriya, Tusit, and Paul Moy.
High Shear Strain Rate Behavior of W-Ni-Fe Tungsten Heavy Alloy Composites as a Function of Matrix Volume Fraction.
ARL-TR-1694, May 1998.

Welch, Gerard E., and Daniel E. Paxson.
Wave Turbine Analysis Tool Development.
ARL-TR-1740, July 1998.

Wellman, Ronald J., and Jerry L. Silvious.
Doppler Signature Measurements of an Mi-24 Hind-D Helicopter at 92-GHz.
ARL-TR-1637, July 1998.

White, Kevin J.
Effect of Propellant Grain Dimensions on Progressivity.
ARL-TR-1532, October 1997.

Wilbur, Matthew L.
Development of a Rotor-Body Coupled Analysis for an Active Mount Aeroelastic Rotor Testbed.
ARL-TR-1313, June 1998.

Wilbur, Matthew L., William T. Yeager, Jr., Jeffrey D. Singleton, Paul H. Mirick, and W. Keats Wilkie.
Wind-Tunnel Evaluation of the Effect of Blade Nonstructural Mass Distribution on Helicopter Fixed-System Loads.
ARL-TR-1401, January 1998.

Wilkerson, Stephen, and Bruce Held.
Mean Jump Effects Due to Launch Dynamics between Training and Kinetic Energy (KE) Cartridges.
ARL-TR-1645, March 1998.

Wilkerson, S. A., and M. Palathingal.
Analysis of an Instrumented Projectile.
ARL-MR-383, December 1997.

Wilson, David Keith.
A New Model for Turbulence Spectra and Correlations Based on Meijer's G-functions.
ARL-TN-104, February 1998.

Wilson, David Keith.
Anisotropic Turbulence Models for Acoustic Propagation through the Neutral, Atmospheric Surface Layer.
ARL-TR-1519, February 1998.

Wilson, D. Keith.
A Prototype Acoustic Battlefield Decision Aid Incorporating Atmospheric Effects and Arbitrary Sensor Layouts.
ARL-TR-1708, September 1998.

Wilson, D. Keith.
Turbulence Models and the Synthesis of Random Fields for Acoustic Wave Propagation Calculations.
ARL-TR-1677, August 1998.

Wood, Gary, Mary J. Miller, and Andrew G. Mott.
Nonlinear Behavior of Zn:Tetrabenzporphyrin.
ARL-TR-1229, January 1998.

Wren, Gloria P., and Paul S. Gough.
Influence of Location of Plasma-Propellant Reaction Front on the Interior Ballistics of Electrothermal-Chemical (ETC) Guns.
ARL-TR-1642, March 1998.

Wren, G. P., and P. S. Gough.
Simulation of a 120-mm Electrothermal-Chemical (ETC) Gun using a Coupled Plasma XKTC Code.
ARL-TR-1700, June 1998.

Wright, William P., Willis F. Jackson, Wayne A. Slack, and John D. Sullivan.
Behind-Armor Effects Due to Dynamically Fired Shaped Charges.
ARL-MR-405, September 1998.

Reports

Young, Stuart, and Chris Winslow.
Shock and Vibration Profile for MEF IAS/TCAC PIP.
ARL-TR-1445, December 1997.

Zernow, Louis.
Final Report on Anomalous Energy Transfer From a Detonation.
ARL-CR-421, April 1998.

Zhu, Dongming, and Robert A. Miller.
Determination of Creep Behavior of Thermal Barrier Coatings Under Laser Imposed Temperature and Stress Gradients.
ARL-TR-1565, November 1997.

Zoltoski, Michael, and Steven Boyer.
Two Foreign Kinetic Energy Penetrators vs. a Reactive Armor Appliqué.
ARL-TR-1648, March 1998.

zum Brunnen, Richard L.
A Computing Model for Information Systems Survivability Assessments.
ARL-TR-1742, August 1998.

zum Brunnen, Richard L.
The Methodology Process Flow of a SLAD Information Systems Survivability Assessment.
ARL-TR-1747, August 1998.

Figure 6. A multiresolution committee-of-networks ATR classifier with stacked generalization.

Source: Lin-Cheng Wang, Sandor Der, and Nasser M. Nasrabadi, *Automatic Target Recognition Using a Modular Neural Network*, ARL-TR-1659.

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